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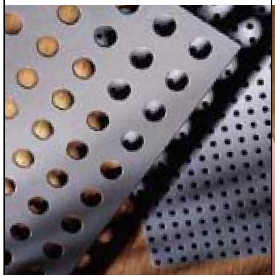

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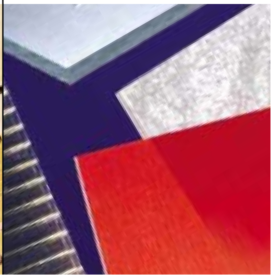

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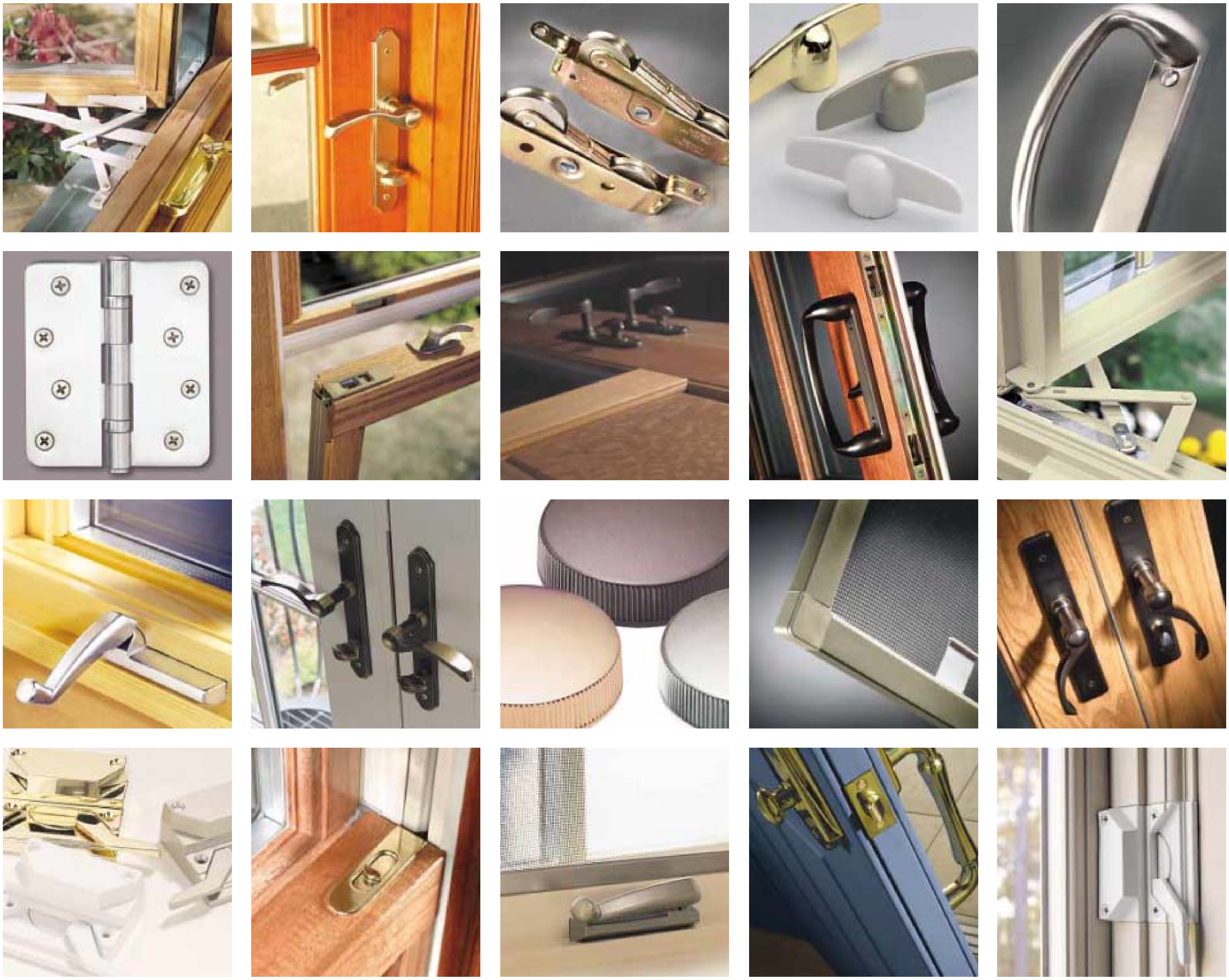

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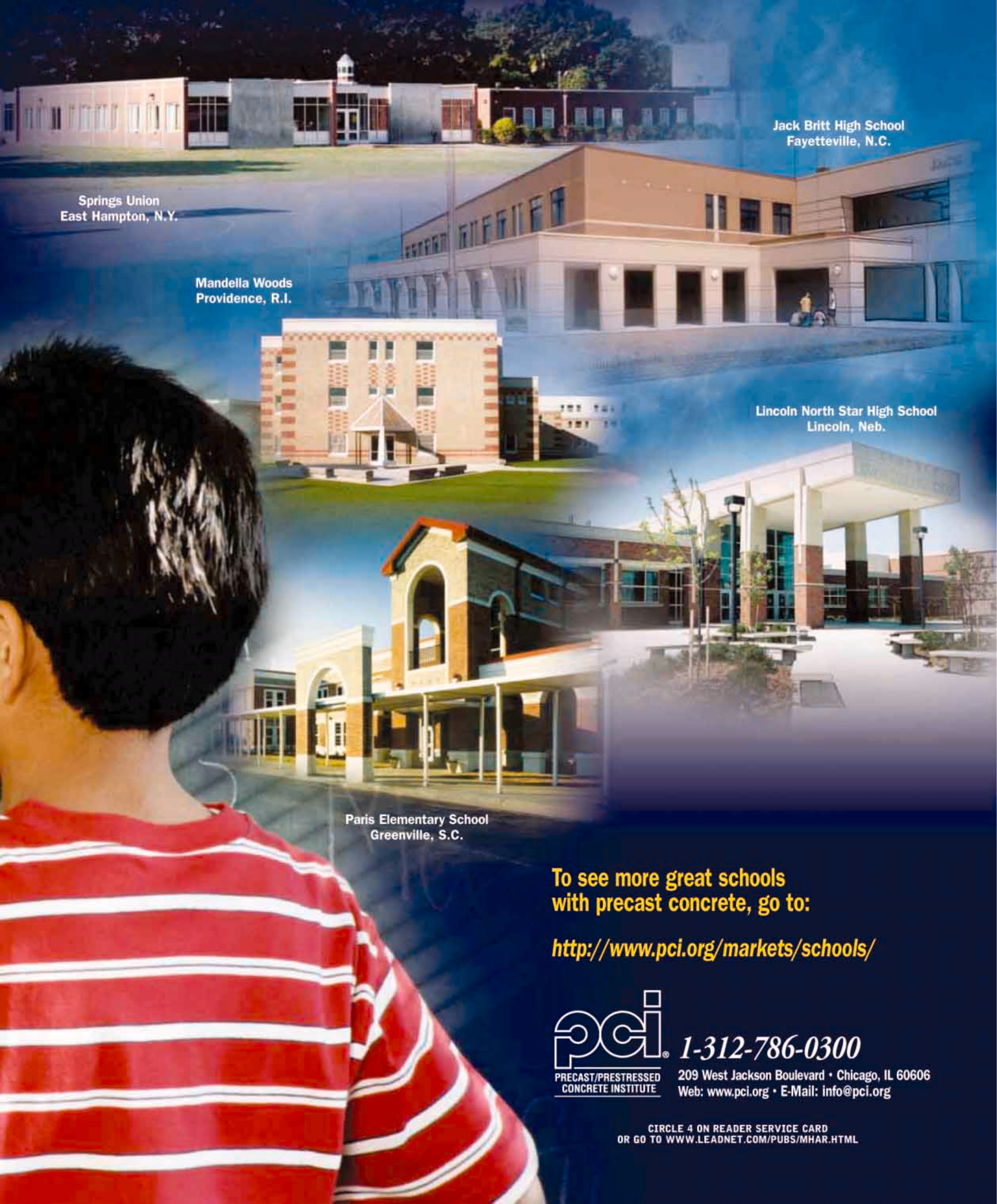
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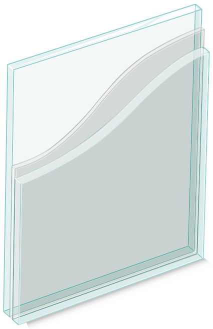

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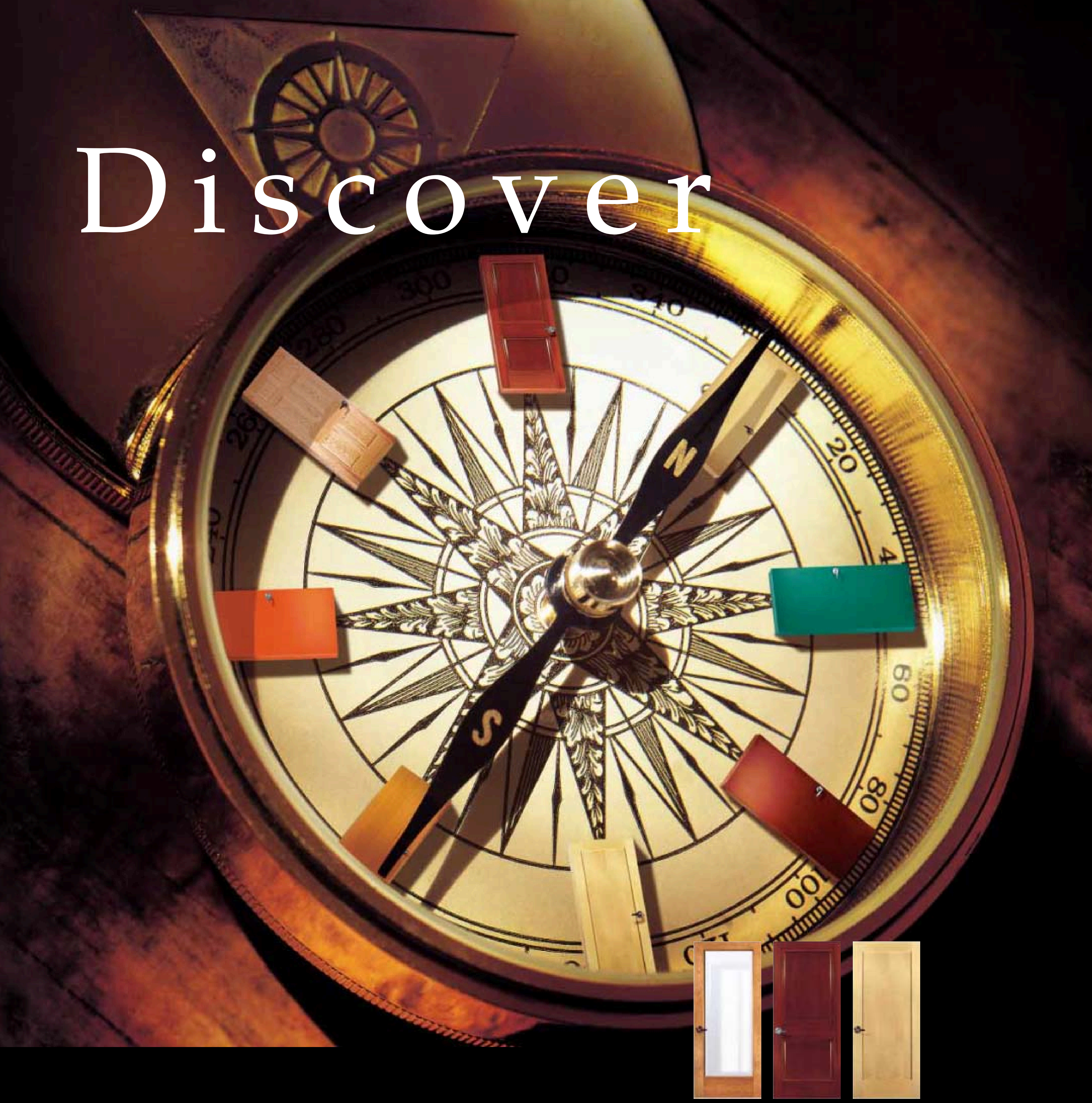

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On the Cover: *Smith College Campus Center. Photograph by Jeff Goldberg/Esto*
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* You can find these stories at ***www.architecturalrecord.com***, including expanded coverage of Projects, Building Types Studies, and Web-only special features.

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August 2004

Project Portfolio

Architects are transforming student life and learning on college and university campuses. Renovations and expansions of these institutions are highlighted this month.

Products

Glass and glazing to maximize views, privacy, and energy-efficiency is this month's focus. You'll also find the submission form for the 2004 Product Reports, updates to our Green Product Guide, and Product of the Month.

Daily Headlines

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James Hotel, Scottsdale, Arizona. Photography: © Eric Laignel.

Building Types Study: Hotels

We're checking into some of the best designed hotels around the world. No reservations? No problem. **New** to our Web site this month, Special Correspondent, Suzanne Stephens, will lead you through a tour of the hotels including some that are not in the pages of our magazine.

Polyhouse. Venice, California. Courtesy XTEN Architecture.

archrecord2

Can two architects with varying backgrounds agree on a certain type of architecture? XTEN Architects prove that it is entirely possible. Also, University of Texas students are doing constructive things with their time this summer.

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CAD Center, Tokyo. Photography: © Toshio Kaneko.

Lighting

An office in Tokyo as well as a nightclub in New York benefit from dramatic uses in lighting. This month we also find that collaborations in lighting efforts can be just as important as the choice of fixtures.

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This month: New guidelines highlight the relationship between sustainable design and human health. Plus, the unique design dynamics of glass block.

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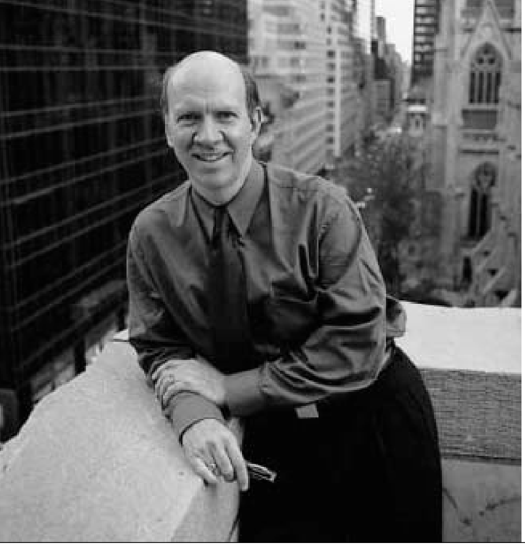

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Beach Reading

Editorial

By Robert Ivy, FAIA

Lying on the beach, the office fades. But as certain as the waves tumbling in, fall approaches on the heels of summer's ozone-laden days. Before you roll over and toss this issue aside, make a mental note: ARCHITECTURAL RECORD has plans for you, combining sights, socializing, and intellectual engagement into a cool season of hot activity. Mark these future dates down, if only in the sand.

September. The Adriatic remains warm enough–trust us–for a dip on September 12, offering a cleansing balm following the Architecture Biennale, themed "Metamorph" by its director, former Centre Canadien d'Architecture director Kurt Forster. In two days' time, attendees will gain an overview of what architects are thinking globally. This premiere architectural exhibition, which runs from September 12 through November 7, should attract more than 100,000 people to the Giardini, the Venetian public gardens. Stop by to chat, because we'll be there. In partnership with the U.S. Department of State's Bureau of Cultural Affairs and the Peggy Guggenheim Collection, ARCHITECTURAL RECORD is responsible for curating the U.S. pavilion.

RECORD editors have assembled an exhibition entitled "Transcending Type"—to be housed in the pavilion's Neoclassical quarters (a mini-Palladian homage designed by Delano and Aldrich in 1930)—in which six talented groups of architects rethink familiar American building categories, including shopping malls, parking garages, and sports arenas. Support for this effort came quickly from the enthusiastic teams themselves (enumerated in a News story in this issue), as well as from corporate sponsors, and, uniquely, from larger firms that are cheering the next generation along. Kudos to them all. You will see and meet them all there.

October. Enough tanning; time to pay the bills. On October 26–27, the magazine will host a five-star business-development conference. Held in conjunction with McGraw-Hill Construction's signatory "Outlook" conference in Washington, D.C., which gives industry leaders a preview of upcoming economic trends, this development conference has been tailored for your office's perpetual marketing needs. If you are like most, you always want to learn better ways to find a project, meet a client, nail an interview, and get the job, get the job, get the job. At this conference, a distinguished group of experts will help you fatten up your bank accounts for winter.

November. The pace quickens. As a follow-up to last year's highly popular Innovation conference, we are convening a new version in New York on November 15–16. In 2003, we invited a spicy potpourri of Nobel Prize laureates, shipbuilders, material scientists, and architects to discuss advances in making and assembling projects. In 2004, we will address the subject of "Innovation in Tall Buildings" more directly. Certainly, we can hear your caveats: I don't make high-rises; I don't have those budgets, so why should they concern me? But tall buildings serve as vertical laboratories for architectural ideas, permitting urban density and energy efficiency all in one place, provoking creative design solutions, from walls to systems. The results of these concentrated design and engineering efforts spill over to buildings at a range of scales, including those you probably do make.

On November 16, join three superb teams and decide for yourself. Renzo Piano Studio, together with Fox & Fowle, will present their work on the forthcoming New York Times headquarters building; SOM, on the highly publicized "Freedom Tower" in Lower Manhattan. Finally, Chicago architect Helmut Jahn introduces his engineering partners, including facade engineer Matthias Shuler and structural engineer Werner Sobek, who will describe their shared work on the award-winning Deutsche Post headquarters, in Cologne.

From Europe to your own backyard, fall promises to stimulate and provoke us. Slathered in suntan oil, you may resent being reminded of the real world. If so, flip over and rest for now. Shorter days arrive soon enough.

Robert Ivy

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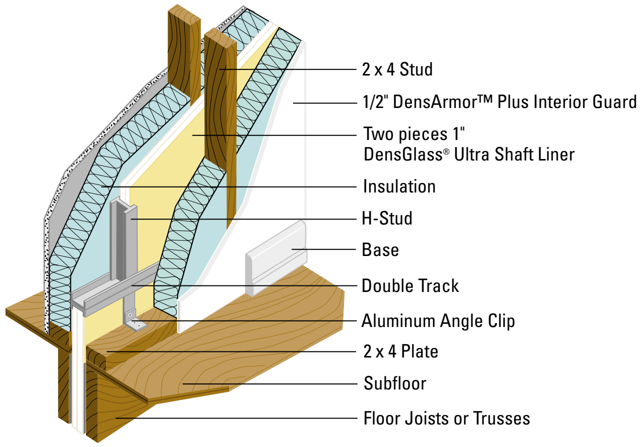
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Letters

Cut the bias

Michael Sorkin's Critique in the June issue [page 117] might more accurately have been titled "Diatribe."

The author comments less on the contemplated Museum of Tolerance than on the policy flaws (as the author perceives them) of the country where the museum is to be located, Israel.

The author implies that Israel lacks moral justification for undertaking such a project, on the basis of its erection of a 30-foot-high security fence along sections of its border. Israel's security fence is intended to prevent infiltration by terrorists and is a measure of last resort. The fence can (and one day, hopefully, will) be removed.

The author writes, "It is not possible to build this project without an opinion on larger issues—real issues of tolerance—in the region." By that standard, Israel is to be lauded, rather than attacked, for its desire to advance, embrace, and commemorate tolerance. None of the regimes surrounding Israel has expressed even the slightest willingness to tolerate cultures other than their own, much less construct a tribute to tolerance as an ideal.

Architecture needs to be judged in a cultural and even political context. However, when the author is so biased that when he looks at Gehry's building he sees the "deconstruction of Yasser Arafat's headquarters in Ramallah," perhaps the article should have been labeled "Op Ed," or should not have been published at all.

—Paul Millman
Superstructures Engineers + Architects
New York City

Memorial mortification

I am simply flabbergasted by the irrelevance of listing the names of the states and colonies on the pillars of the World War II Memorial [Editorial, June 2004, page 23]. If anything, the war pulled Americans together rather than slotting them into their home states. What do state names have to do with it?

Here are two suggestions as to how to fix this problem: 1) Remove the names of the states and replace them with the names of the countries that fought in the war. This at least would be educational, and even a relevant statement of the global nature of the war; 2) Leave the names of the states and, after each presidential election, paint the individual pillars either red or blue to indicate whether their state's electoral votes went to the Republicans or to the Democrats. It's not really any more relevant, but it would be interesting, lots of fun—and so Washington!

—Peter Harnik
Arlington, Va.

Built work, then accolades

When Richard Meier received the Pritzker Prize in 1984, he commented that he thought he might receive this award some day but not that early in his career. Meier had, by that date, a substantial body of built work, but believed a significant range of successful built projects was necessary for an award of this stature. His understanding of architecture seems to agree with most critics and historians: The structure must be experienced in context to be understood and valued. By contrast, Zaha Hadid is just beginning her built work. According to some reviews, the results are mixed. I've read that the Vitra Fire Station, 1993, was so unusable that it is now a museum; that people interviewed at the Transit Station, Strasbourg, France, were in disbelief that the structure was finished. And these projects are in European countries more accustomed to avant-garde architecture. I like the photographs of her Cincinnati building, but I have no idea if it works well for staff and viewers.

In the May Editorial [page 17], you expressed your distress that the popular press was reviewing Hadid on her gender and as a "well-oiled" spectacle at a Miami pool. You must consider that at this time Hadid has more drawings and potential than built work. Lacking architecture, the popular press falls back to what sells: Sex.

—Robert H. Kahn, AIA
Brunswick, Maine

New building, same mistake

Consider the situation—a respected profession that promotes the enhancement of environmental values creates unfriendly environmental conditions in a neighborhood surrounding a major project. As a Los Angeles County architectural design reviewer for the Walt Disney Concert Hall [News, May 2004, page 44], I'd like to say that this should not have happened, but it did. The design team was fully aware of a similar situation. During construction of the Guggenheim Museum in Bilbao, a portion of the roof surface was found to be "scorched" by the sunlight reflected from the angled titanium cladding-system panel configurations on the roof. The problem was duly corrected.

Based on my Bilbao field-observation notes, my comments called for the Disney design to thoroughly study the reflection of the sun on the cladding system during critical periods of the year, and to verify that all highly polished cladding-system surface configurations be placed strategically to overcome hazardous conditions, including changes in summer temperature and glare and intense reflection on surrounding structures, including moving vehicles or aircraft. At that time, I was assured by the design team that all necessary actions would be taken.

I was not aware of the complaints until very recently, when I noticed the "screen" over the troubled cladding area. At a recent dinner, I casually asked Jack Burnell of Disney what had happened to the sun angle calculations. Always with a sense of humor, Jack's response was, "They forgot the Founder's room."

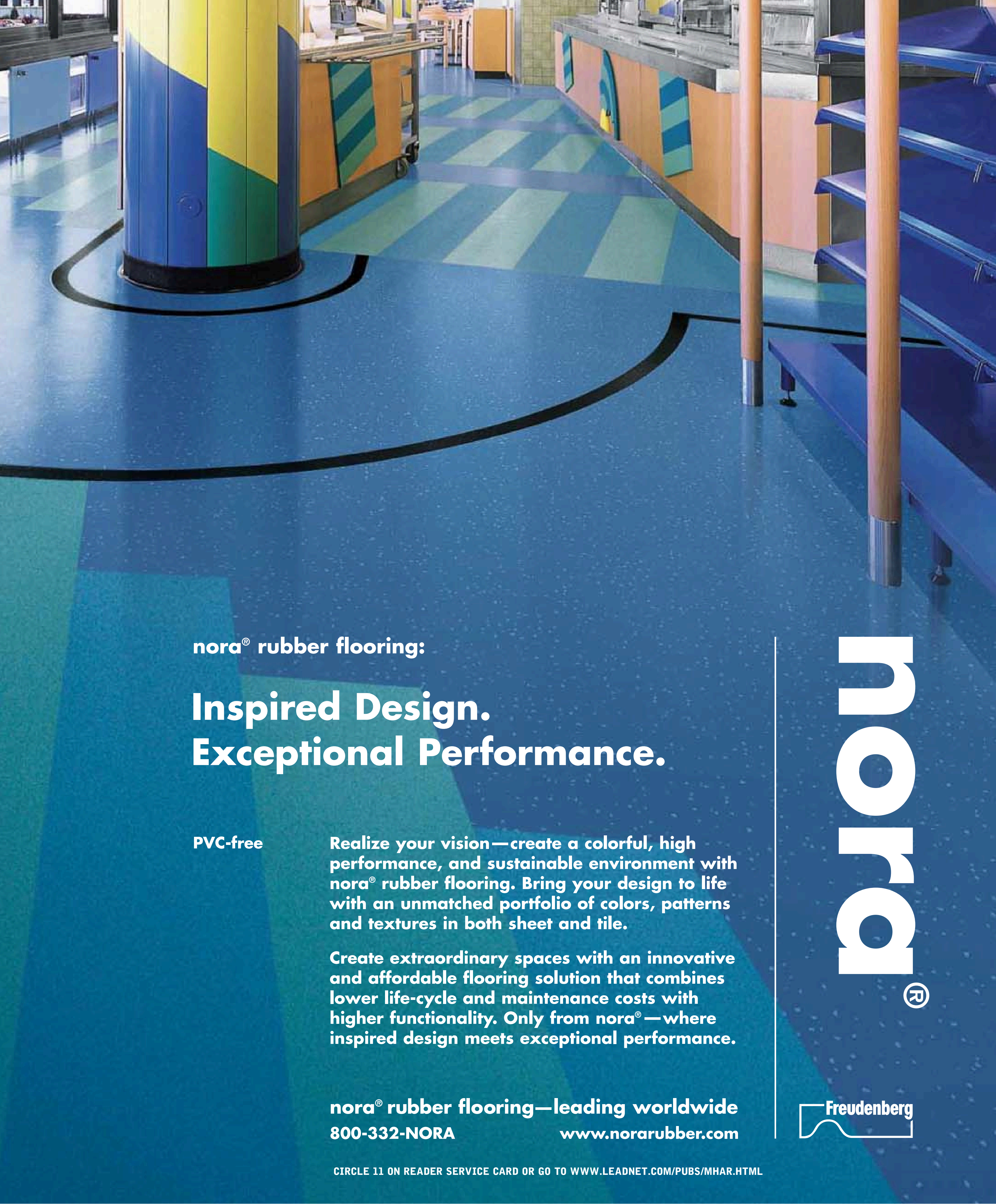
I believe architects take this "happening" as a serious lesson. When architects are insensitive to the environmental concerns, creating strong architectural design statements inappropriately conceived and not friendly to the environment, undesired conditions occur. In this case, there is no exception. A thorough study of the impacted mistakes must be exposed, analyzed, and appropriately corrected.

—R. MyoMyint Sein, AIA
Retired architectural design reviewer of Walt Disney Concert Hall, Los Angeles County Department of Public Works

Corrections

In the June issue, on page 198, Elliott Kaufman should have been credited for the photo of Perry Lakes Park, Perry County, Ala., Rural Studio. Also in June [page 151], VCBO should have been listed as architect of record along with Moshe Safdie as design architect for the Salt Lake City Public Library. In the May issue, on page 148, credits for the Washington Convention Center should have noted the project was a joint venture of TVS-D&P-Mariani PLLC. In News [July, page 21], the photo listed as AIA College of Fellows honorees is actually of the former presidents of the AIA waiting for the College of Fellows ceremony to commence.

Write to rivy@mcgraw-hill.com.



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Record News

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Madrid's cultural axis getting remake p. 28
RECORD curating American Pavilion exhibition at Venice Architecture Biennale p. 32

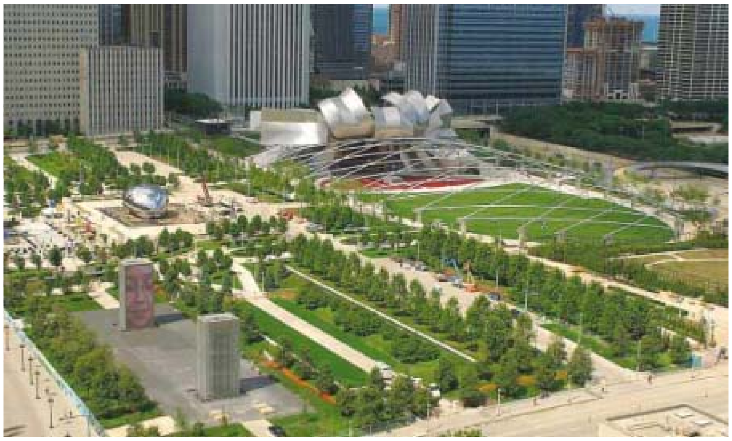
Sunday in the park with architecture

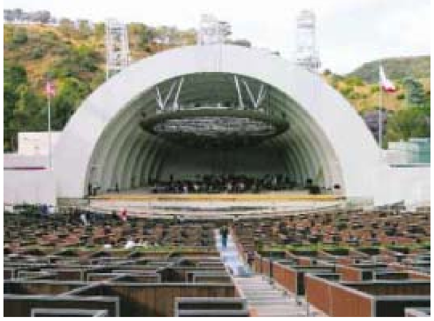
Chicago's Millennium Park [May 2004, page 61] opened in mid-July, stunning the large local crowds and drawing worldwide attention to a city already known for its architecture.

Highlights of the 24-acre, $450 million cultural and recreational space include a twisting, stainless-steel band shell by Frank Gehry, FAIA (who also designed a snaking pedestrian bridge); a highly reflective, teardrop-shaped sculpture by Anish Kapoor; an interactive sculptural fountain/video installation by Jaume Plensa; and a contemporary garden by Kathryn Gustafson. Other elements include a public theater, bicycle station, restaurant, promenade, and ice rink.

Located between Lake Michigan and Michigan Avenue, the site used to be an eyesore: a rail yard and parking lot extending from Grant Park. It now serves not only as a respite for locals, but as a tourist magnet and landmark for the city. Thousands attended its opening weekend celebration, beginning July 16.

The project was funded by the city, corporations, and local donors, who saw the price tag balloon to three times original estimates, with completion delayed by four years. Skidmore, Owings & Merrill's original Beaux-Arts scheme was mostly scrapped. And while Mayor Richard M. Daley has made the park a centerpiece of his vision to improve the city's built environment, some neighbors have complained that the park's cost has deprived other local projects of necessary funding. *Sam Lubell*


Gehry's Jay Pritzker Pavilion dominates a surreal architectural landscape.


The bowl maintains its shape and location, but little else.

Hollywood Bowl is fine-tuned and reimagined

June 25 marked the opening night and unveiling of the transformed amphitheater shell and stage at Los Angeles's Hollywood Bowl, a beloved landmark.

L.A.-based Hodgetts + Fung Design and Architecture's reconception of the structure maintains its trademark arch while incorporating a more contemporary aesthetic and adding important acoustic features.

The shape of the interior, which has always been an acoustic challenge, has been altered and lined with thin baffles, while a floating elliptical ring reflects sound waves to all parts of the stage. Programmable louvers adapt the canopy to various types of music performances, allowing for stage size to be increased by 30 percent. Flanking the arch are stepped wings that shield a new backstage area.

Funding for the $25 million upgrades to the structure, originally built in 1929, was approved by voters in 1996. One of the largest natural amphitheaters in the world, with seating just under 18,000, the Hollywood Bowl has long been the summer home of the Los Angeles Philharmonic, and its design has evolved through the years with the contributions of architectural luminaries like Myron Hunt, and more recently, Frank Gehry. *Allison Milionis*

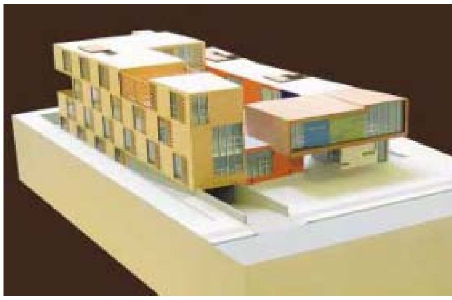
Modern condominium complex will go up next to Schindler House in Los Angeles

Prompting some raised eyebrows, a new condominium complex next to R.M. Schindler's famed studio-residence in West Hollywood received planning approval on June 25.

The 82-year-old Schindler House is widely recognized as an early Modernist landmark. For more than a year, officials at the MAK Center for Art + Architecture, which occupies the house, have fought the development, fearing it would diminish the building's historic presence. The center even held a design competition last year that reenvisioned the neighboring plot.

Developer Richard Loring and architect Lorcan O'Herlihy, AIA, insist that their project has been mindful of its well-known neighbor. The 33,912 square-foot complex, called "Habitat 825," houses 19 units in a wood, concrete, and glass structure. The building varies in height from one to two stories to create a low north profile that avoids casting shadows onto the Schindler building. "Our goal is to draw inspiration from Schindler in developing new forms of contemporary lifestyle," says O'Herlihy.

Still, Kimberli Meyer, MAK Center director, expresses concern with the new site's shading impact and with what she sees as incomplete visual buffering. Construction on Habitat 825 will begin in September, with completion anticipated by early 2006. *Tony Illia*


Habitat 825's unorthodox design.

PHOTOGRAPHY: THE ASSOCIATED PRESS (TOP); COURTESY HODGETTS AND FUNG DESIGN AND ARCHITECTURE (BOTTOM LEFT); COURTESY LORCAN O'HERLIHY, AIA (BOTTOM RIGHT)

REBUILDING LOWER MANHATTAN

OFF THE RECORD

Mark Wigley has been named the dean of the Graduate School of Architecture, Planning and Preservation at Columbia University.

The founding partners of Hardy Holzman Pfeiffer Associates (HHPA), Hugh Hardy, FAIA, Malcolm Holzman, FAIA, and Norman Pfeiffer, FAIA, are disbanding effective August 1.

Washington, D.C., city officials voted to authorize $40 million in tax increments to help finance a Frank Gehry–designed renovation and expansion of the Corcoran Gallery of Art.

Time magazine has reported that Richard Meier, FAIA, is designing a new Hard Rock hotel-casino tower in Las Vegas.

The National Trust for Historic Preservation recently announced its 2004 list of America's 11 Most Endangered Historic Places. For the list, visit www.nationaltrust.org/11Most/.

Architect Jack Pringle, a partner in the London firm Pringle Brandon, has been elected the next president of the Royal Institute of British Architects (RIBA).

Edward Killingsworth, one of the last Case Study House architects, died of on July 6 at the age of 86.

Sasaki Associates has named Dennis Pieprz its new president.

Sir Nicholas Grimshaw has announced a succession plan that will lessen his role in the operational side of the business at Grimshaw Architects.

Robert Davidson has left his position as lead architect of the Port Authority of New York and New Jersey to join Manhattan architecture firm STV.

Amid uncertainty, Freedom Tower gets a cornerstone

The Freedom Tower cornerstone, a 20-ton granite rock, placed at the site.

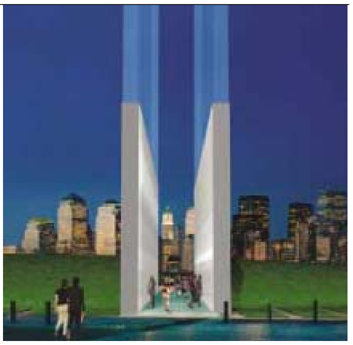
In a ceremony on July 4, New York leaders laid the cornerstone for the 1,776-foot-tall World Trade Center Freedom Tower.

The stone, a 20-ton granite block, is inscribed with the words "To honor those who lost their lives on September 11, 2001, and as a tribute to the enduring spirit of freedom." It was placed in the northwest corner of the site, at bedrock, 70 feet below street level.

The tower itself, designed by Skidmore, Owings & Merrill, will be (if built) one of the world's tallest buildings, with over 72 floors, 2.6 million square feet of office space, and a massive latticework structure.

But it is not a sure thing. Because of developer Larry Silverstein's recent court loss over insurance settlements, funding for the building remains in doubt, as does the demand for downtown office space. Meanwhile, as many continue to argue over the designs and feasibility of projects at Ground Zero, and as lawsuits between architects and developers (see below) begin to emerge, most agree that progress has come particularly quickly (some say too quickly) for a project of such magnitude. *S.L.*

New Jersey memorials evoke strong memories



Schwartz's New Jersey memorial.

New York–based architect Frederic Schwartz was selected last month to design the New Jersey 9/11 memorial in Jersey City. The design, which is called "Empty Sky," frames a view of the former Twin Towers from the Hudson River's banks in Jersey City.

Schwartz was the founding member of THINK, a group selected as a finalist for the Ground Zero master plan. He also won the commission to design Westchester County, New York's memorial, and was a finalist to design a Hoboken, New Jersey, memorial.

The New Jersey memorial will be composed of two 30-foot-high, 200-foot-long steel walls, flanking a 16-foot-wide bluestone path. The walls will be inscribed with the names of New Jersey's nearly 700 victims and will be surrounded by a landscaped berm that forms a natural amphitheater facing Manhattan.

Just upriver, the Hoboken, New Jersey, 9/11 memorial commission was awarded to FLOW, which includes Jeanne Gang of Studio/Gang/Architects as well as artists, engineers, and lighting designers. The memorial, which the designers call "Hoboken Island," includes a "Narrative Wall" of first-person accounts of the day that will lead to a small artificial island in the Hudson River. An illuminated glass "Tidal Well" in the center will list Hoboken's 57 victims. *Kevin Lerner*

Wasn't it inevitable? Libeskind sues Silverstein

On July 13, months of frustration over the development of Lower Manhattan seemed to boil over as World Trade Center master planner Daniel Libeskind sued developer Larry Silverstein for money he claims is owed him for his architectural services at Ground Zero. Libeskind's lawyer, Edward Hayes, says that Silverstein had originally promised to pay his client but has since reneged because of differences over the World Trade Center master plan, which he says Silverstein considers an economic impediment to his developments. The lawsuit was filed in New York Supreme Court in Manhattan. Libeskind is suing for $843,750, an amount based, says Hayes, on a percentage of the Freedom Tower's total cost, a procedure rooted in industry practice. Hayes says Silverstein has offered to pay only $200,000, but adds that no contract had been signed between Silverstein and Libeskind. "We made a mistake," he says. "We should have worked out a deal beforehand." In a written statement, Harold J. Rubenstein, Silverstein's spokesman, responded, "Daniel Libeskind has already been paid many millions of dollars for his work by the LMDC and the Port Authority and is unable to provide any industry standard time sheets or other documentation that would justify an additional payment of more than $800,000." ***S.L.***

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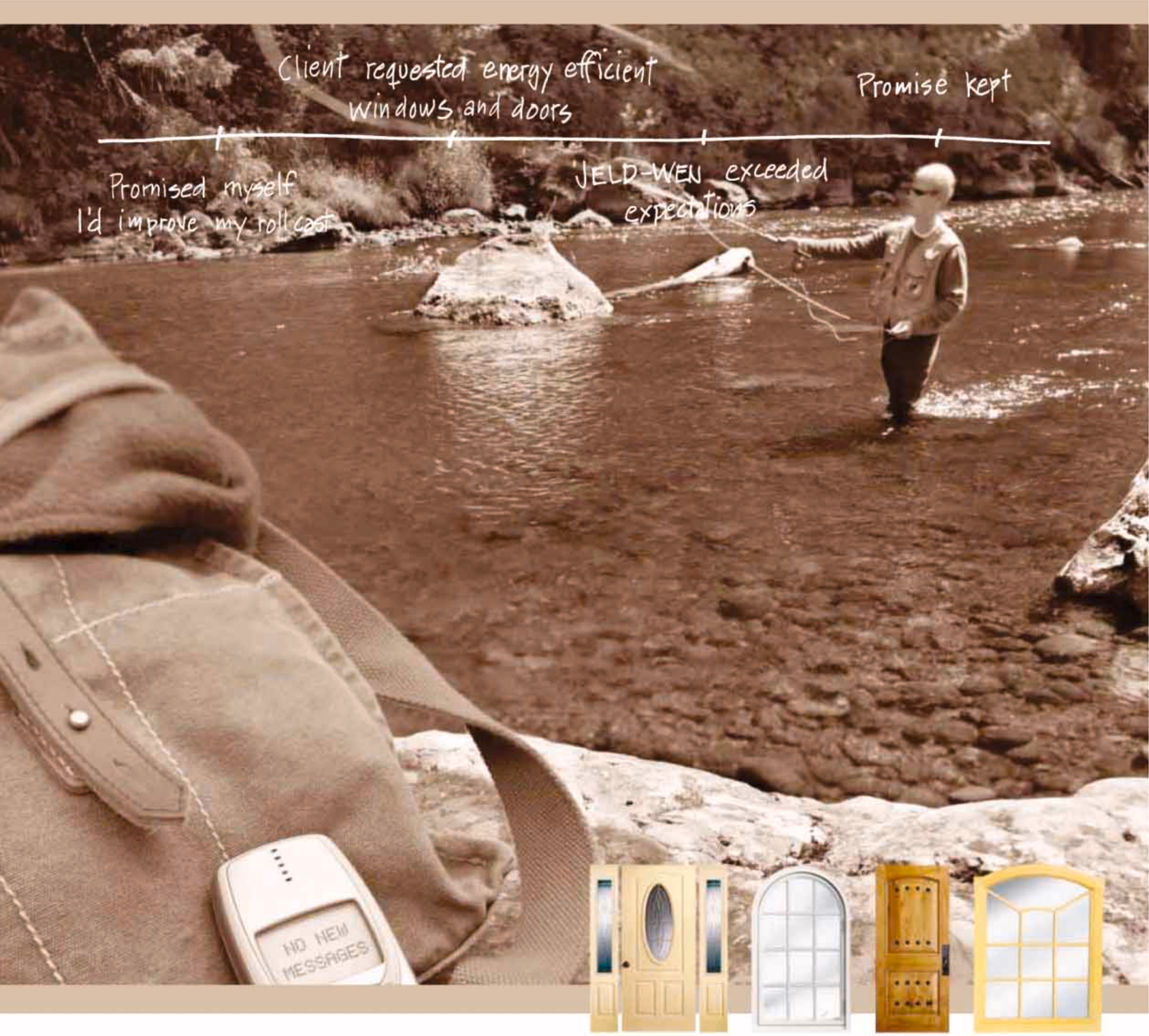
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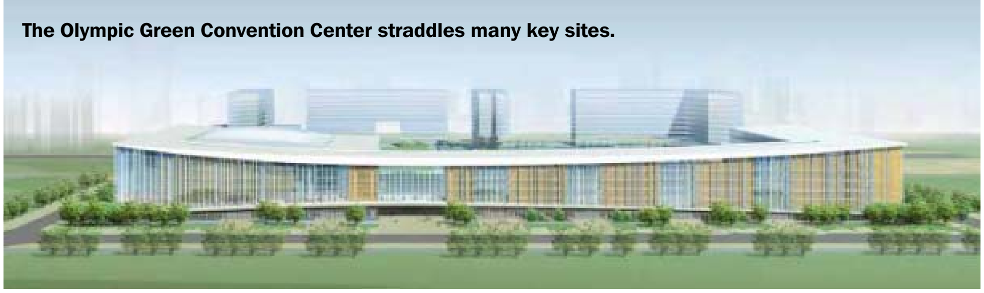

The Olympic Green Convention Center straddles many key sites.

IMAGE: COURTESY RMJM

RMJM to design key Beijing olympic venue

Chinese developer Beijing North Star has awarded U.K.-based RMJM the commission to design the Beijing Olympic Green Convention Center, one of the 2008 Olympic Games' key venues.

RMJM beat out competitors that included OMA, Philip Cox Architects, and KMD with a design that straddles several different sites of the games and includes elevated piazzas and pedestrian bridges. The convex design of the rectilinear building's front elevation allows for a road to flow underneath the convention center.

The biggest challenge of the project, says Gordon Affleck, an associate director for RMJM based in Hong Kong, is that the convention center is supposed to include historic themes from the Qin Dynasty because it sits midway on the games' main boulevard. The boulevard, master planned by Sasaki Associates and Tianjin Huahui Architecture and Design Company, is a symbolic time line of Chinese history from 3000 B.C. to the present day.

Since the Qin Dynasty, when a common Chinese language was established and seven kingdoms were brought under one rule, was a period of unification in the 2nd-century B.C., RMJM came up with "a building that unifies everything with a busy public edge," says Affleck.

The convention center, just under 3 million square feet, will be located near many other key sites, including the main sports stadium, the swimming complex, and the Olympic Park. The convention center will house the main press center for the games and also host indoor Olympic events like fencing and pistol shooting. RMJM's commission also includes the master planning of a nearby 30-acre site for hotel, commercial, and retail space.

But while the convention center has been created for the Beijing 2008 Olympics, Affleck says that much consideration went into making the space a multifunctionary venue that will have a lifetime that stretches well beyond the four weeks that the Olympics will last. "We see the Olympics as the first tenant of the exhibition center," he says. The design also includes environmentally-friendly features like natural ventilation and solar panels for heating. *Jen Lin-Liu*

Probe says steel tubes, not columns, are likely trigger for Paris airport's concourse collapse

External tubular steel struts puncturing the shell-like concrete roof of Paris Charles de Gaulle Airport's newest concourse likely triggered the May 23 collapse [RECORD, July 2004, page 163], say preliminary findings of a French government probe released last week. But investigators have yet to explain why the structure's behavior changed suddenly on a Sunday morning, 30 months after its construction. The collapse killed four people.

The lower number of struts in play reduced the bending strength of part of the 2,133-foot-long shell, causing it to break in flexure, suspect investigators. However, a conclusive explanation is unlikely before the end of this year, says Jean-Armand Calgaro, one of four experts on the government commission. The commission, appointed two days after the collapse and led by senior civil engineer Jean Berthier, was not asked to assign blame. Berthier's team has ruled out a shearing failure of columns supporting the flat tube-shaped roof as the cause of the disaster. Subject to further surveys, the commission also eliminated foundation pile settlement and the legacy of known column construction problems as likely causes. ***Peter Reina***

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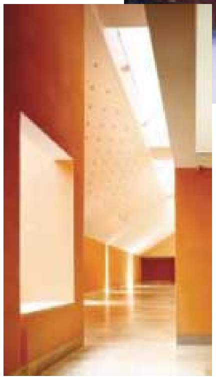
Madrid's cultural axis seeing splendid improvements



The Thyssen-Bornemisza Museum project (above and left) joins work by Nouvel and Moneo in the district.

The first of a series of improvements to the cultural facilities around Madrid's Prado Museum were unveiled this June with the inauguration of an addition to the Thyssen-Bornemisza Museum and the partial opening of Jean Nouvel's addition to the Reina Sofía Museum of Contemporary Art. Other work under way includes Rafael Moneo's addition to the Prado, which will open sometime next year; Herzog & de Meuron's Caixa Forum Madrid, a center for contemporary art run by the Caixa Foundation; and a restructuring of the surrounding streets into a pedestrian-friendly "Cultural Axis" by a team led by Alvaro Siza.

The 86,000-square-foot annex to the Thyssen occupies two buildings adjacent to the 18th-century palace rehabilitated by Moneo in 1992, and accommodates additions to the original collection. The project, by Barcelona architects Manuel Baquero, Robert Brufau, and BOPBAA (Josep Bohigas, Francesc Pla, and Iñaki Baquero), involved partially gutting an early-20th-century palace and apartment located behind the museum's entry garden and inserting new galleries matching the proportions and finishes of Moneo's spaces.

Nouvel's addition to the Reina Sofía features three pavilions grouped around a patio, dramatically shaded by a soaring cherry-colored metal canopy. It increases the museum's space by 60 percent, and includes a patio-level café and a library, composed of a series of sculptural glass-walled terraces overlooking the street.

Moneo's discreet brick and stone structure behind the Prado, meanwhile, incorporates a 16th-century cloister, a surviving fragment of a monastery once occupying the site. The new spaces supply visitor and technical services lacking in the original 1785 Neoclassical building, including temporary exhibition galleries, a restaurant, auditorium, library, and restoration studio. *David Cohn*

Destination architecture reaches out

Santiago Calatrava's $23.5 million "Sundial Bridge" opened in Redding, California, on July 4 weekend. The gleaming white, cable-stayed pedestrian bridge, paved with translucent glass and veined granite, spans 700 feet across the Sacramento River. It has a single, 217-foot-tall pylon that leans back at a 42-degree angle, creating an upward sweep that supports the bridge deck. The eye-catching structure is drawing record numbers to this normally sleepy town (population 84,000). "It's having a huge effect," says tourism director Angela Byrd. "From what I've seen, there haven't been fewer than 100 people on that bridge since the day we opened it." ***S.L. and T.I.***

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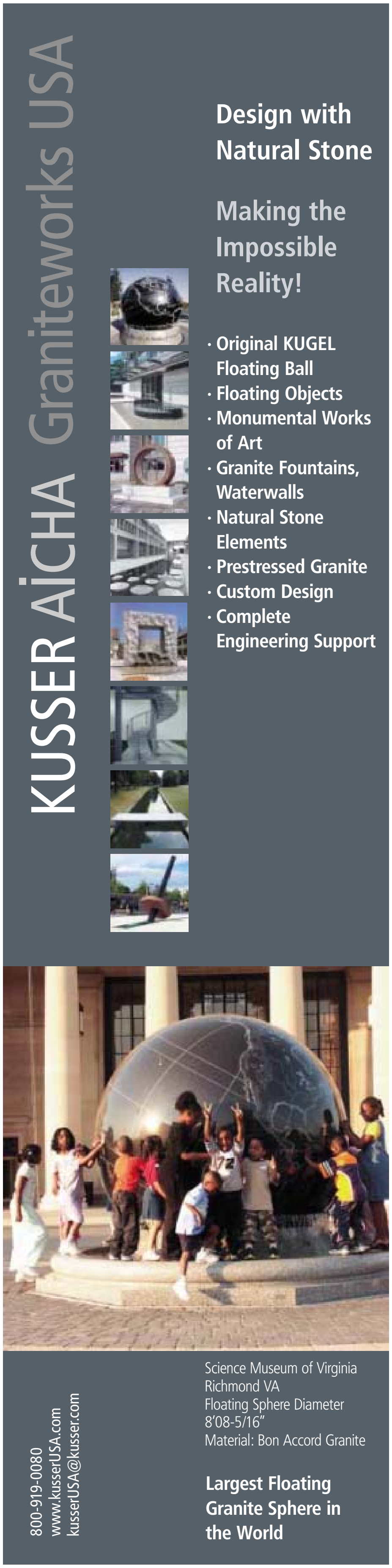
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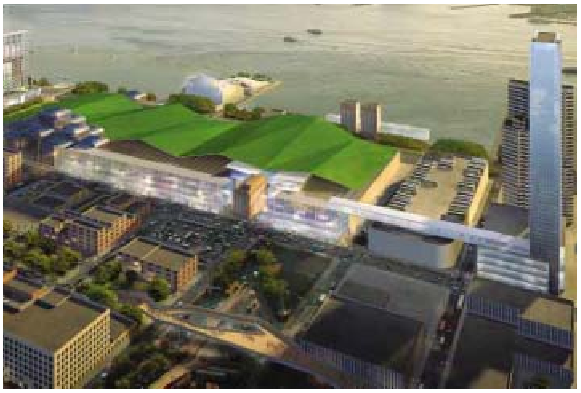


The Javits's green roof, designed by HOK, has folds reminiscent of the Hudson River's land shelf.

New York's Javits Center design shows off world's largest green roof

In late June, New York's Jacob K. Javits Convention Center unveiled plans for a greatly expanded space, designed by Saint Louis–based HOK.

The new structure, expanding north and west from the current space by I.M. Pei, will almost double its size. Currently, Javits is one of the smallest of any major U.S. convention space, at 760,000 square feet. The new center will boast revamped interiors and exteriors and will measure 1.34 million square feet.

A notable feature of the new design is a 22-acre green roof, which will be the largest in the world, the firm says. Covered with seedum, the roof will be made up of folded planes, inspired by the geography of the Hudson River Valley, while the layout, as described by HOK principal Kenneth Drucker, AIA, is inspired by Central Park's Great Lawn. "Once we realized we would be surrounded by several 50-story buildings (part of the planned Hudson Yards project), we thought we would could really relate to the park."

Because of upkeep difficulties, only about 5 acres will be accessible to the public, in the form of hardscape, grassy areas, and an esplanade. Construction on the project is set to begin in 2005. Legislation to authorize spending for the Javits expansion is currently pending in the New York State Assembly. *S.L.*

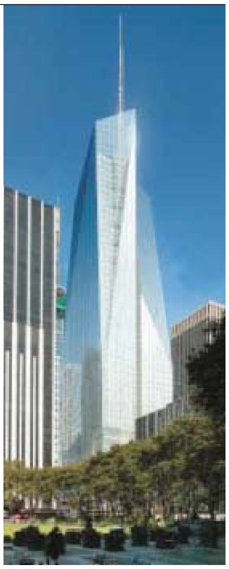
Big and Green: One of the tallest buildings in Manhattan will also be eco-friendly

In late June, Cook + Fox Architects unveiled designs for Bank of America tower, which will likely be the second-tallest building in New York City, and, the firm says, one of the most environmentally-friendly tall structures in the U.S.

The 2.1-million-square-foot, 945-foot-tall skyscraper, located on Sixth Avenue between 42nd and 43rd Streets, will be made largely of glass, steel, and aluminum. Its form will incorporate large angular folds and vertical lines, helping provide varied views of the surrounding cityscape from inside and change viewers' perception as they walk around the building. The design, firm members point out, is also meant to reduce wind drag against the tower, particularly its upper portions.

The project's green features build on those of the Condé Nast Building, 4 Times Square, next door. Firm principal Robert Fox, AIA, worked on the building with Fox & Fowle. Daylight at Bank of America is increased with taller ceilings (up to a foot taller than most office buildings, which explains why the mammoth tower will only have 54 stories) and floor-to-ceiling windows, while an on-site cogeneration plant will provide much of the building's energy. Other green elements include LED lights, recyclable building materials, waterless urinals, a gray-water system to capture wastewater and rainwater, and under-floor displacement air ventilation that allows for air filtering and individual heat and air control. An urban garden room will greet visitors on the lower levels. The building will also incorporate the restored and reconstructed 1,000-seat Henry Miller Theater.

"We knew we had to keep pushing the limits of green architecture," says Fox. The building will house Bank of America's offices on its lower half, and a number of future tenants on its upper floors. It is scheduled to break ground in August and open in 2008. *S.L.*



The crystalline Bank of America tower will dominate Bryant Park.

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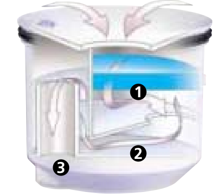

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ARCHITECTURAL RECORD curating Venice Architecture Biennale's American Pavilion

The U.S. State Department has chosen ARCHITECTURAL RECORD to curate the U.S. Pavilion exhibition at the Venice Architecture Biennale this September.

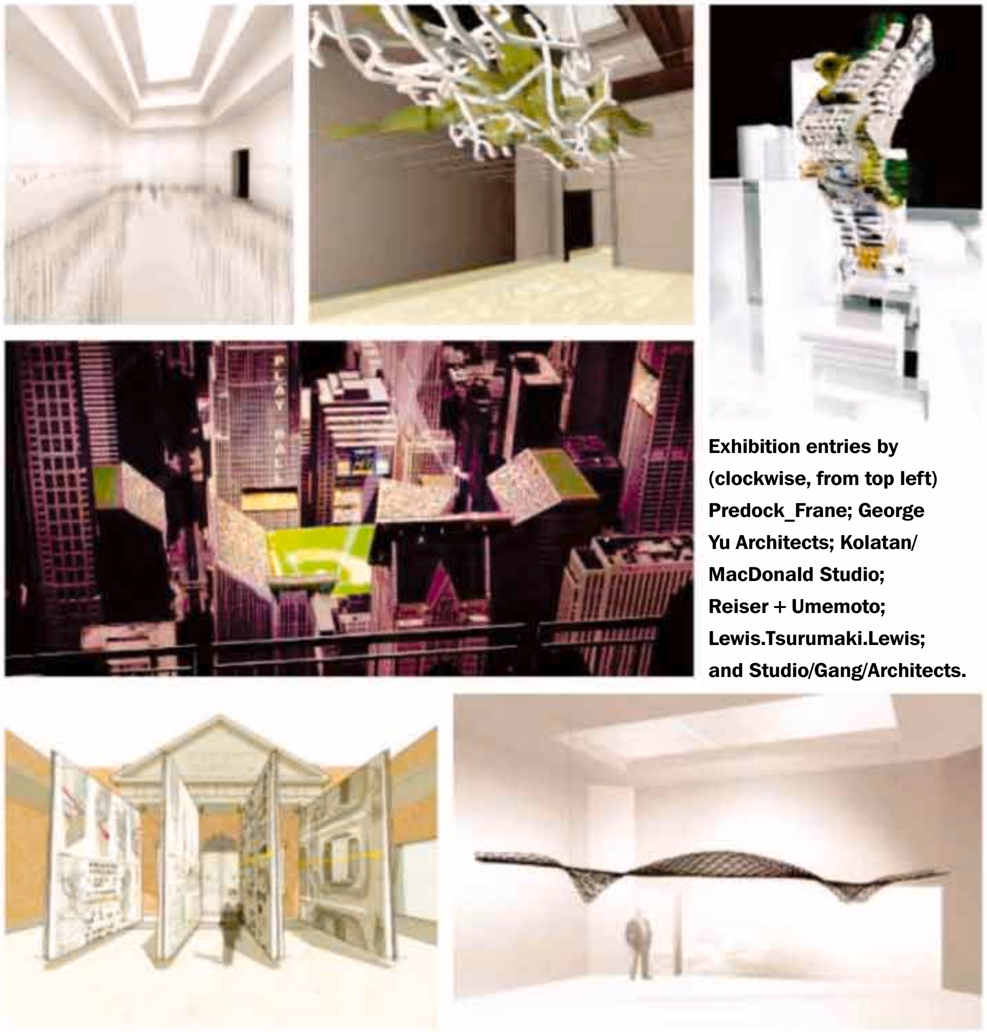
Entitled *Transcending Type*, the exhibition, developed by RECORD editors, will feature six vanguard U.S. firms exploring new forms and uses for iconic modern building types, and providing a fresh perspective on structures that have been replicated globally. Drawings, digital media, and three-dimensional installations will present new visions for the shopping center, apartment tower, sports arena, parking garage, spiritual space, and highway interchange.

"This exhibition lifts architecture out of the familiar, giving these building types a new energy and sense of possibility," says Robert Ivy, FAIA, RECORD editor in chief and exhibition commissioner.

The show will be on view at the U.S. Pavilion in the Giardini di Castello from September 12 to November 7, 2004, and is part of the 9th International Architecture Exhibition of the Venice Biennale—whose theme, "Metamorph," signals critical transformations in architecture over the past 50 years. *S.L.*

Firms and projects represented:

- **George Yu Architects, Los Angeles:** Shopping Center
- **Kolatan/MacDonald Studio, New York:** Residential High-rise
- **Studio/Gang/Architects, Chicago:** Sports Arena
- **Lewis.Tsurumaki.Lewis, New York:** Parking Garage
- **Predock_Frane, Los Angeles:** Spiritual Space
- **Reiser + Umemoto, New York:** Highway Interchange



Exhibition entries by (clockwise, from top left) Predock_Frane; George Yu Architects; Kolatan/MacDonald Studio; Reiser + Umemoto; Lewis.Tsurumaki.Lewis; and Studio/Gang/Architects.

PHOTOGRAPHY: (CLOCKWISE, FROM TOP LEFT) COURTESY PREDOCK_FRANE; GEORGE YU ARCHITECTS; KOLATAN/MACDONALD STUDIO; REISER + UMEMOTO; LEWIS.TSURUMAKI.LEWIS; STUDIO/GANG/ARCHITECTS

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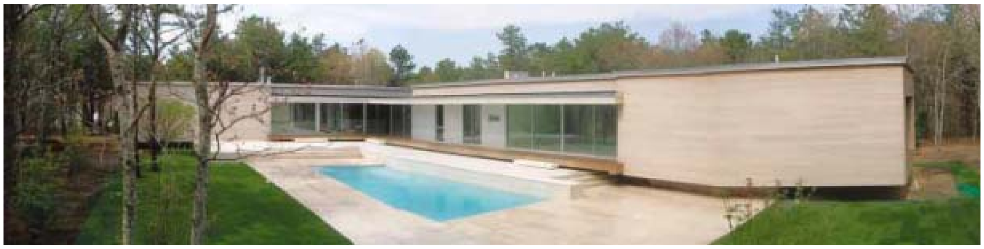

The Hariris' house is one of several Modern dwellings by big-name architects in the new development.

In one of the country's most fashionable vacation spots, the Hamptons, on New York's Long Island, developer Harry Coco Brown has completed the first home of his development, Houses at Sagaponac, and placed it on the market. The building is one of 34 modern, architecturally distinctive vacation homes designed by well-known architects.

The home's architects, sisters Gisue and Mojgan Hariri, designed the four-bedroom, wood-framed structure in a Modernist style. A cantilevered ramp leads to two elevated rectangular volumes with grayish cedar siding that form an L-shape around a large swimming pool. A wooded lot provides privacy to a sleek house that otherwise exhibits openness. Substantial exterior sections, meanwhile, are made of floor-to-ceiling windows.

Three other houses under construction are due to be finished by the end of the year. A Buddhist-style structure, designed by Henry Cobb, FAIA, has separate pavilions inside a courtyard linked by a columned passageway with 108 louvered doors made of teak. Another, by Shigeru Ban, will be surrounded by a small forest of 12-foot-high bamboo, and is distinguished by structural supports that are made from cabinets, bookcases, and other furniture.

A former head of development for 20th Century Fox, Brown arranged the project on a roughly 120-acre failed subdivision that he bought a decade ago. The area is today one of the largest unbuilt parcels of land in the Hamptons. Like an art film producer, Brown saved money by getting star architects to give him cut-rate prices on their designs. He even used product placement: Brown says Viking, Lutron Lighting, and Sony gave him bargains on their products for the opportunity to be involved.

The unique development, Brown comments, is a reaction against the new, elaborate "McMansions" with manicured lawns that are fast gobbling up the area's remaining open space. In contrast, Brown's houses are set in a densely wooded, trail-laden area, are moderately scaled, and eschew ornamentation. "We can have community without having conformity—it won't be ersatz old-fashioned," says Brown. *Alex Ulam*

First London Architecture Biennale draws thousands

More than 25,000 people attended the inaugural London Architecture Biennale that was staged June 19–28. The brainchild of former *RIBA Journal* editor Peter Murray, the event featured more than 70 talks, parties, seminars, film screenings, exhibitions, debates, and other events, uniting the public with architects, artists, designers, politicians, and celebrities to explore the past, present, and evolving future of Clerkenwell, an area of the city chosen as the biennale's first location, due to its identity as a creative hub.

One of the many highlights was the *Urban Interventions* exhibition, profiling the work of more than 50 leading, locally based architects, including Zaha Hadid, CZWG, Wilkinson Eyre, AHMM, and McDowell and Benedetti. Meanwhile, a record-breaking 1,162 attended an evening lecture at the Barbican Centre by Hadid. Among other events was a debate about Prince Charles's role in recent architecture, and another on the role of the creative industries in urban regeneration. A new guide to the area, Clerkitecture, featuring its historic gems and recent redevelopments, was published during the biennale. The event's runaway success means it will be extended to other areas of London in successive years. "The biennale really touched a chord. The huge response and positive feedback means that the LAB is now a permanent fixture in the capital's calendar," said Murray. *Lucy Bullivant*

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Trinity Church takes a dominant seat in Boston.

Richardson's Trinity Church in next phase of renovation

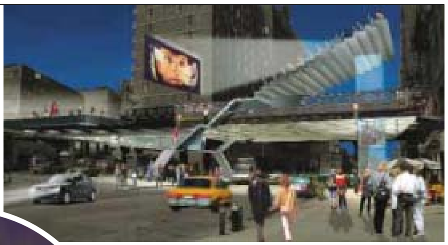
This summer, the restoration of H.H. Richardson's Trinity Church in Boston shifted to the landmark building's murals and stained glass. Conservation experts will spend the next year stabilizing, cleaning, and restoring roughly 9,500 square feet of murals and decorative painting by John La Farge. Work on Trinity's stained glass, designed by La Farge and others, will take roughly two years. This spring, workers finished patching and weatherproofing the exterior of the 127-year-old church's brownstone central tower.

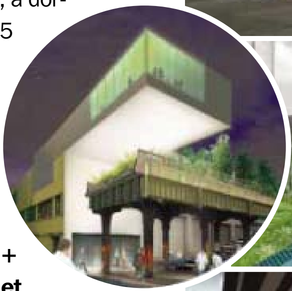
The La Farge designs, last retouched in the 1950s, line the tower's interior. Water damage and peeling is mostly confined to the decorative painting. The stained glass includes La Farge's multilayered designs, some of which require disassembly and cleaning.

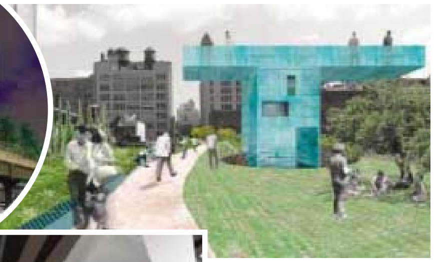
The Trinity parish has also added a basement meeting room, upgraded the electrical system, and drilled six 1,500-foot geothermal wells. The Trinity project, for which the parish aims to raise $53 million, is headed by Goody Clancy and Associates. *Ted Smalley Bowen*

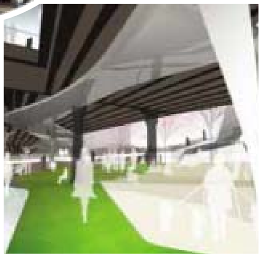
High Line finalists unveil imaginative designs

On July 15, New York's Friends of the High Line (FHL) unveiled designs by four teams competing to redesign Manhattan's High Line, a dormant rail trestle spanning some 1.5 miles along the city's west side. The winning team will be selected this August and, by early 2005, FHL and the city hope to have a master plan that will allow construction to begin in 2006. **Field Operations and Diller Scofidio + Renfro, with Olafur Eliasson, Piet Oudolf, and Buro Happold's** "Agri-tecture" is a flowing mixture of organic and man-made environments, soft and hard surfaces (including a bridge, mound, pit, and "flyover"), with diverse grasslands punctuated by open and enclosed gathering spaces. **Zaha Hadid Architects, with Balmori Associates, Skidmore, Owings & Merrill, and studio MDA** has created a sleek and futuristic vision for the High Line, a techno-friendly environment that seeks to establish a "connection between landscape, topography, and architecture." Open and enclosed walkways will traverse parks and public spaces, anchored by a marketplace at the southern end of the structure. **TerraGRAM: Michael Van Valkenburgh Associates, with D.I.R.T. Studio and Beyer Blinder Belle** visualizes a "park meander," a diverse array of green environments laid down in the midst of extreme urbanity: miniature forests, an urban canyon, and azalea thickets. The team based its ideas on "appreciation for this industrial landscape and accepting it for what it is—degraded and in some cases toxic"—though possessing inherent beauty and a New York–style resilience. **Steven Holl Architects, with Hargreaves Associates and HNTB** plans a "suspended valley" with greenways and pathways anchored on one end by an observation tower and 500-person event space, and on the other by a water-taxi pier on the Hudson River. *Ilan Kayatsky*









Designs by (clockwise, from top) Field Operations and Diller Scofidio + Renfro; Steven Holl; Zaha Hadid, SOM, and others; and TerraGRAM.

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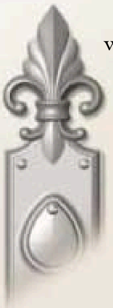

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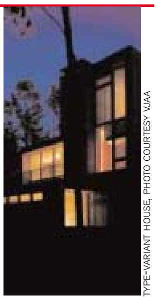
TYPE-VARIANT HOUSE, PHOTO COURTESY VJAA

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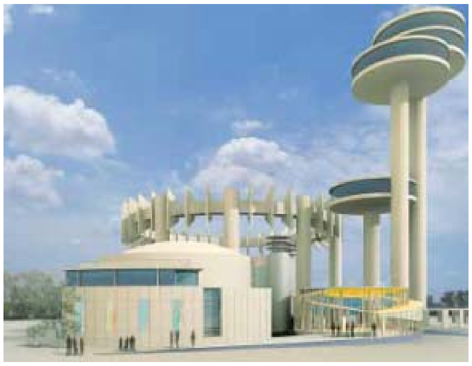
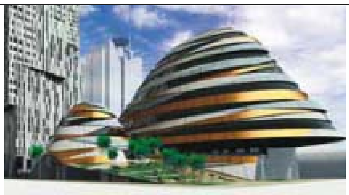


New day dawns for Philip Johnson's New York Pavilion

Philip Johnson, FAIA's New York State Pavilion, a now-derelict amphitheater and gallery complex that opened as a whimsical attraction for the 1964–65 World's Fair, is poised to undergo a substantial alteration. Queens Theatre in the Park, a community playhouse that has occupied the pavilion's cylindrical Theaterama building since 1991, will break ground this fall on a $5.2 million addition designed by Caples Jefferson Architects and Lee/Timchula Architects. The project (left) will include a cabaret space, offices, and a 3,000-square-foot, spiral-shaped lobby, nestled between the Theaterama and three saucerlike observation towers (seen in the 1997 film *Men In Black*). The lobby, at the entry of the Tent of Tomorrow, an outdoor arena that is the pavilion's most significant space, will be clad in glass, and its roof punctuated by skylights to soften its visual impact and maintain views.

Meanwhile, New York City's Department of Parks & Recreation has issued a "request for expressions of interest" to rehabilitate the pavilion itself. Another interested group is CREATE Architecture Planning & Design, which is forming a nonprofit organization dedicated to stabilizing the Tent of Tomorrow and converting it into an aerospace museum. CREATE has teamed with several companies, including Johnson's firm Philip Johnson Alan Ritchie Architects. *James Murdock*

Van Egeraat's "city in a city" for Moscow

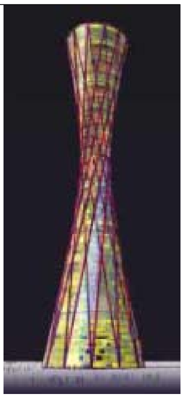


Dutch architect Erick van Egeraat has designed a bold new addition to Moscow's urban fabric, a 3-million square-foot, mixed-use conference, shopping, and residential complex called Capital City Moscow. Consisting of two towers to the north, at 61 and 72 stories, respectively, joined by three conical domes of varying sizes in front, the redevelopment's major volumes rely on a series of interconnected routes on different levels to navigate the landscape.

Commercial and leisure spaces occupy the lower stories and domes, commercial spaces make up the intermediate tower floors, and the upper stories accommodate apartments with a broad range of floor plans. This last element is achieved through a nonorthogonal, twisted plan, using cantilevered floors for layout flexibility and to create a more slender silhouette.

"The great variety of apartments creates the idea that tenants occupy a different space from their neighbors," says Van Egeraat. The project is slated for completion in 2005. *Nick Olsen*

Shuttleworth's first new design memorable



Ken Shuttleworth, the creative force behind many of Norman Foster and Partners' projects, who recently left to set up Make, a new London architectural practice that includes 21 of Foster's former staff who left to join the new firm, has announced plans for a vibrantly colored, 984-foot tower in London. The Vortex, as it is known, is hyperboloid in shape, widening at midpoint to create a slender conical form at the top of the structure. Apart from its startling appearance and scale, towering over Foster's SwissRe, two features make the project part of a new trend in London office architecture. First, it is a simple perimeter structure, like SwissRe and Richard Rogers's planned Leadenhall tower. It will also utilize wind-turbine technology and groundwater cooling. The building will include office and residential spaces, effectively creating a mini-city.

Shuttleworth's concept has a 164-foot-diameter roof, making it a prime site for a public green space. The unnamed client hopes to announce the site in the next six months. *Lucy Bullivant*

IMAGES: COURTESY QUEENS THEATRE IN THE PARK (TOP); ERIK VAN EGERAAT (MIDDLE); MAKE ARCHITECTURE (BOTTOM)

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News Briefs

New York Times Building gets vital financing GMAC Commercial Mortgage Corporation recently agreed to provide $320 million in construction financing to the developers of the future New York Times headquarters in Times Square. The loan will allow for construction on the 1.6-million-square-foot building to begin this fall, says David Thurm, vice president of real estate development for the Times company. Demolition of the existing buildings on the site will be completed in late July or early August, while soil cleanup will be concluded shortly afterward. *S.L.*

Grand Avenue narrows the field
The Los Angeles Grand Avenue Authority announced the two finalists of the design competition to transform a major downtown street into a focal point of the city. The competition had attracted a roster of international "all-star" designers who have joined forces with local developers to pursue the important $1.2 billion project and an opportunity to redefine Grand Avenue. Passing on several notable teams, the committee narrowed the shortlist to Forest City, a Cleveland-based developer that had declined to name its design team, and Related Industries, with a team comprising David Childs from Skidmore, Owings & Merrill, Howard Elkus of Elkus/Manfredi Architects, and Brenda Levin. *A.M.*

Cooper-Hewitt names awards finalists Rick Joy, Polshek Partnership, Joseph E. Spear, and Rafael Viñoly were named finalists in the Cooper-Hewitt National Design Awards Architecture Design category. Sponsored by the Smithsonian's Cooper-Hewitt National Design Museum, the awards celebrate contributions to the field in various disciplines, including architecture, communications, environment, fashion, and product design. Winners will be announced in October. *N.O.*

Shanghai planners explore efforts to preserve alley houses City planners in Shanghai are introducing a plan to preserve the city's remaining historic buildings, called *longtangs*, or residential alley houses. The plan, which was proposed by local officials of one of Shanghai's wealthiest districts and the city's land bureau, aims to restore the alley houses, rather than demolish them, and to reduce the density of the neighborhoods by more than 50 percent.

One problem remains: Though the plan will give families the option of moving back into the historic buildings, many residents—who survive on incomes of a couple of hundred dollars a month—will not be able to afford to pay the estimated $625 per square meter, about 25 percent of the estimated value of the homes. "About a third of residents don't want to leave, but they also don't have the money to pay even at subsidized rates," admits Wu. *J.L.L.*

One of Shanghai's *longtangs*.

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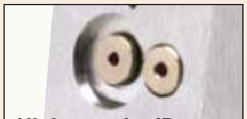

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STAR ATTRACTION

Celestial ceiling crowns Texas attraction

Knedak Bobo Group

Nothing says Texas like an impressive Lone Star. So designers insisted on a Texas-sized star atop the 2-acre atrium glass ceiling at the Gaylord Texan Resort.

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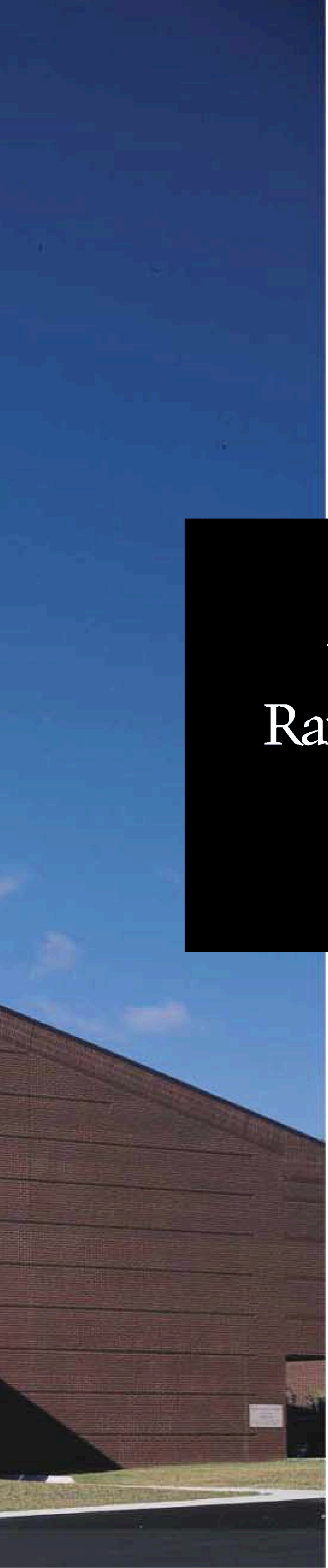

When planning a sanctuary addition to the First Alliance Church in Erie, Pennsylvania, both glue-laminated timber and steel joists were considered for the structural system.

Cost analysis showed a 30 percent advantage for Vulcraft steel joists, thus saving the congregation approximately $600,000. This was enough to pay for the building fit-out including pews, floor coverings, sound system, stage lighting and custom woodwork.

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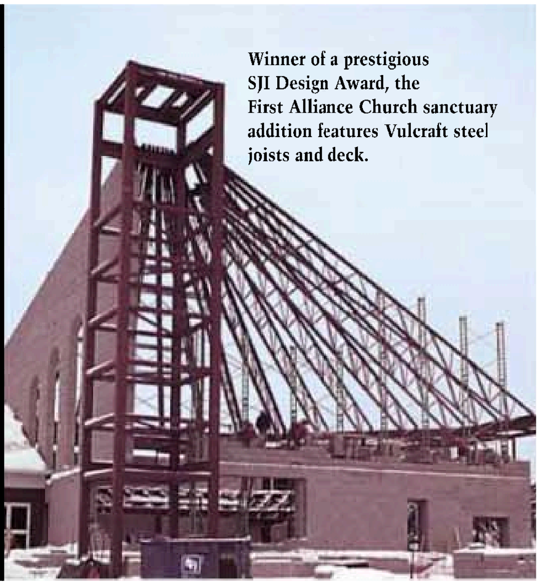

Winner of a prestigious SJI Design Award, the First Alliance Church sanctuary addition features Vulcraft steel joists and deck.

Steel joists also created greater headroom throughout the building by allowing both the catwalk and mechanical, electrical and plumbing systems to exist inside the structural envelope.

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Dates & Events

New & Upcoming Exhibitions

Rita McBride: Theater Concrete
Long Island City, N.Y.
September 12–November 29, 2004
McBride's work examines elements of architecture and design through contemporary sculpture. At the Sculpture Center. For information, call 718/361-1750 or visit www.sculpture-center.org.

Investigating Where We Live
Washington, D.C.
August 13–September 12, 2004
Washington-area middle and high school students examine the city's architectural, ethnic, and cultural diversity using cameras and notebooks. The exhibition expresses their ideas and impressions of the District's Columbia Heights, Eckington, and Southwest Waterfront neighborhoods. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

Ongoing Exhibitions

Jorn Utzon: The Architect's Universe
Humlebaek, Denmark
Through August 29, 2004
This is a show illustrating Utzon's working method—his process—focusing both on the work and its sources of inspiration. At Louisiana. Call 45/4919-0719 or visit www.louisiana.dk.

SouthwestNET: PHX/LA
Scottsdale, Ariz.
Through September 5, 2004
An exhibition of recent works by six emerging artists from Phoenix and Los Angeles. Although separated geographically, these artists explore similar issues related to the Southwest's unique version of urbanism, from its ubiquitous Postmodern architecture to the impact of suburban sprawl on the desert environment. At the Scottsdale Museum of Contemporary Art (SMoCA). Call 480/994-2787 or visit www.smoca.org for information.

Samuel Mockbee and the Rural Studio: Community Architecture
Washington, D.C.
Through September 6, 2004
Both a practical program for educating future architects and a vital force for improving living conditions in one of the nation's poorest regions, Auburn University's Rural Studio began with the drive and vision of Samuel Mockbee (1944–2001), who was posthumously awarded the 2004 AIA Gold Medal. The exhibition includes both models and photographs of the projects, as well as a number of Mockbee's paintings and sketchbooks from the Rural Studio. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org for further information.

Absent Wall: Recalling Gordon Matta-Clark's Garbage Wall (1970)
Montreal
Through September 6, 2004
An installation presented in conjunction with *Out of the Box: Price Rossi Stirling + Matta-Clark*. At the Canadian Centre for Architecture. Call 514/939-7000 or visit www.cca.qc.ca.

Big & Green: Toward Sustainable Architecture in the 21st Century
Chicago
Through September 12, 2004
This national touring exhibition presents 50 projects from around the world portraying architecture that demands less of our natural resources and infrastructure, enhances comfort, and is economical over the life of a building. In the ArchiCenter. Call 312/922-3432 or visit www.architecture.org.

A.R.E. Workstation
Phoenix, Ariz.
Permanent installation
The A.R.E. (Architects Registration Exam) Workstation project by the Associates Committee of the Central Arizona Chapter AIA was inspired by the recent move by NCARB to come up with the A.R.E. Version 3.0. In the AIA AZ Gallery. For further information, call 602/252-4200 or visit www.aia-arizona.org.

Lectures, Conferences, Symposia

Houston Mod: Leo Marmol
Houston
August 19, 2004
Leo Marmol, AIA, managing principal of Marmol Radziner + Associates of Los Angeles, will be the second annual speaker of the Houston Mod

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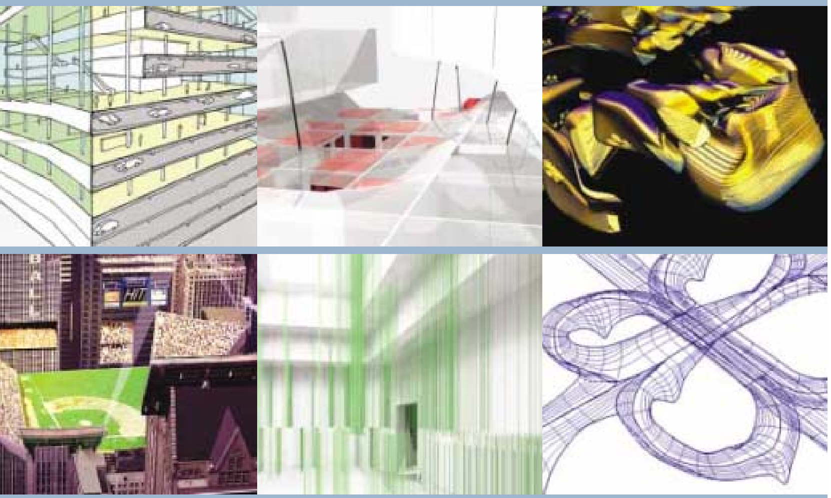

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Dates & Events

August lecture. His firm is responsible for the restoration of Richard Neutra's Kaufmann House in Palm Springs. At the MFAH Brown Auditorium. For information, visit www.marmol-radziner.com or www.houstonmod.org.

Downtown Revitalization and Historic Preservation: Creating More Livable Cities for the 21st Century
Washington, D.C.
August 23, 2004
Rodney L. Swink, FASLA, director of the Office of Urban Development in the North Carolina Division of Community Assistance, will discuss livable downtowns and how they may guide the growth of other urban areas. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

ARMA 2004 Summer Meeting
Kansas City, Mo.
August 24–26, 2004
The Asphalt Roofing Manufacturers Association (ARMA) is the North American trade association representing the manufacturers and suppliers of bituminous-based residential and commercial fiberglass and organic-asphalt-shingle roofing products, roll roofing, built-up roofing systems, and modified bitumen roofing systems. At the Fairmont Hotel. Call 202/207-0917 or visit www.asphaltroofing.org.

Future Office: Design, Development, Community
Charlotte, N.C.
August 26–28, 2004
Conference featuring Frank Duffy (London), Eugene Kohn (New York), Christoph Ingenhoven (Dusseldorf), Ken Yeang (Kuala Lumpur), and many other research, urban design, and development participants focusing on new trends in workplace environments, office buildings, and community design. At the Westin Charlotte Hotel. Call 919/833-6656 or visit www.aianc.org.

Holophane Commercial and Retail Lighting Seminar
Newark, Ohio
August 30, 2004
This seminar will provide an overview of lighting technology with detailed discussions on lighting by application. At the Holophane Light & Vision Center. Call 740/349-4258 or visit www.holophane.com.

Competitions

The 2004 Design Charrette: Urban Legends
Houston
Deadline: August 7, 2004
The RDA Partners of the Rice Design Alliance invite interested parties to participate in a juried competition, Urban Legends, an exercise that will focus on mixed-use urban development. At the Gerald D. Hines College of Architecture. For more information, call 713/348-4876 or visit www.rda.rice.edu.

The International Bauhaus Award
Deadline: October 23, 2004
When cities become transit places, the urban space changes: Flexibility and mobility become key qualities. For further information, visit www.bauhaus-dessau.de or e-mail award@bauhaus-dessau.de.

Architecture for Humanity 3rd International Design Competition
Deadline: October 1, 2004
A competition to design a facility in Somkhele, South Africa, an area with one of the highest HIV/AIDS rates in the world. It will be run by medical professionals from the Africa Center for Health and Population Studies and will serve as a gathering place for youth between ages 9 and 14. For more information, visit www.architectureforhumanity.org.

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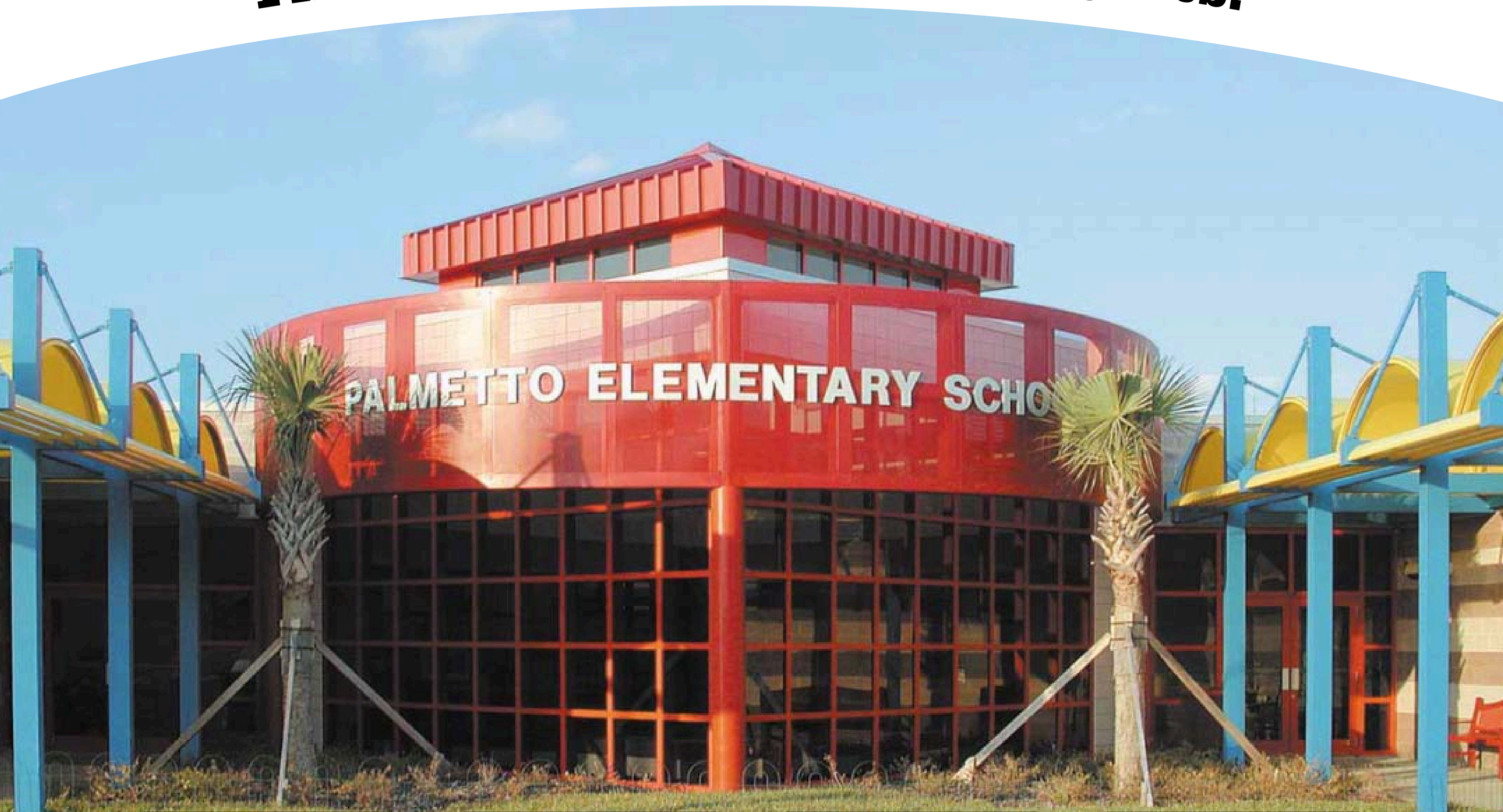

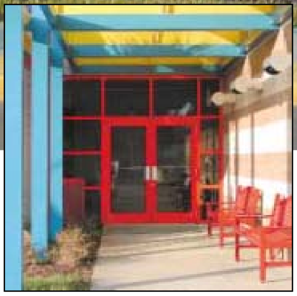
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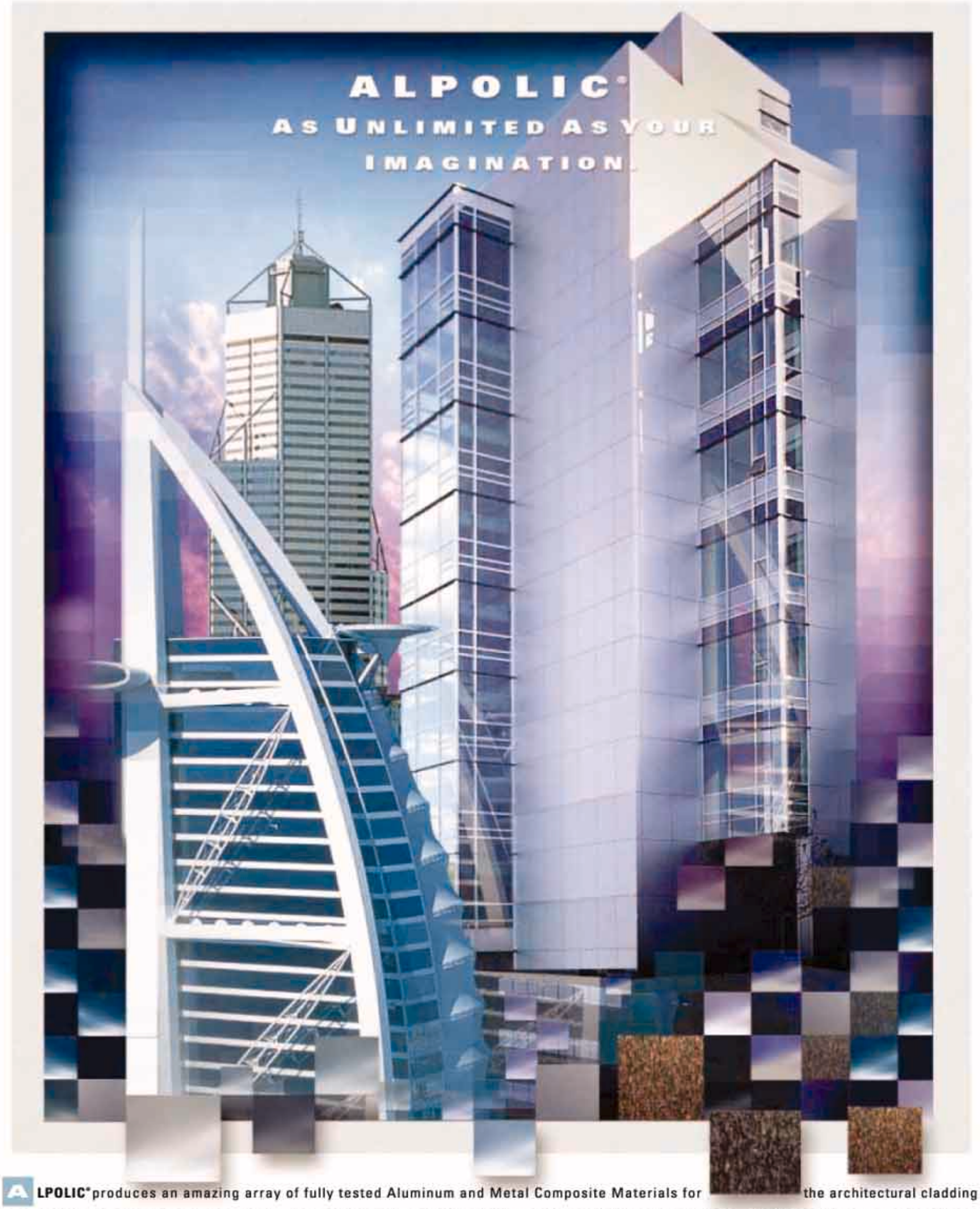

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For and about the new generation of architects

archrecord2

FOR THE EMERGING ARCHITECT

This month's **Design** section profiles two architects with different architectural backgrounds who have come to agree on their special brand of design. And in **Work**, we find out what several students at the University of Texas, along with their professor, have done with their summer vacation. As always, more information can be found regarding these stories in the **archrecord2** part of our Web site.

DESIGN

Materialism and architecture

Monika Häfelfinger describes herself as a rational-minded architect. Her partner, Austin Kelly, says he is the opposite of rational. "Our backgrounds are Minimal versus Expressionist," states Kelly. Häfelfinger, born in Switzerland, worked for Herzog & de Meuron; American-born Kelly has worked with Frank Gehry and Eric Owen Moss. After spending time in Europe, though, Kelly's approach to architecture shifted. "Originally, my concept of architecture was all about expressionistic forms of the building and how it related to the city," he explains. "But now Monika and I are like-minded architects in that we look at projects from all points of view." In 2000, this pair created XTEN Architects in Los Angeles.

The first project on which Häfelfinger and Kelly collaborated was a residence in the Los Angeles area. "The owner held a mini-competition for young local architects," says Kelly, "and we won with our design, Polyhouse." Located on the edge of the Venice, California, canals, the house is sheathed mainly in polycarbonate panels and glass to take advantage of the adjoining canal and park. At different times of the day, the changing light gives the panels varying levels of translucency.

The Polyhouse is an example of an overriding theme in XTEN's concept of design. "*Synthetic* is a word we find ourselves using a lot," Kelly points out. "It comes from *synthesis*, from resolving the multiple constraints and requirements of a project through differentiated uses of one specific material and one highly articulated form." So while the Polyhouse's main building material is polycarbonate, another project, the vhouse, utilizes redwood throughout the exterior and interior, and their mhouse's double-height studio's main element is ribbed aluminum. This single massing and material strategy sets XTEN's architecture apart from that of other young firms, which tend to use what Kelly calls a "collage approach."

In 2002, XTEN established an associate office in Switzerland to more easily coordinate projects and competitions the team is involved with in the Basel area. One of these projects is himmelrain, a residential program that includes apartment buildings, courtyards, and walkways. The number of units required by the

mhouse (top), Marina Del Rey, Cal., 2003.
vhouse (middle), Los Angeles, Cal., 2002.
Polyhouse (bottom) Venice, Cal., 2001.

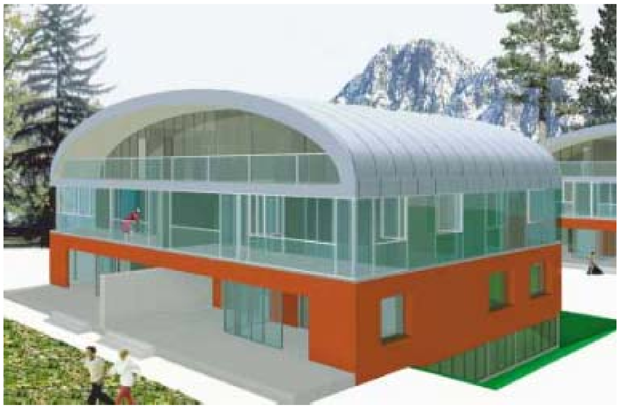
Once they find a material that works for a project, the XTEN architects use the material almost exclusively in as many ways and scales as possible. The firm plans to continue this focus on materials in future projects.

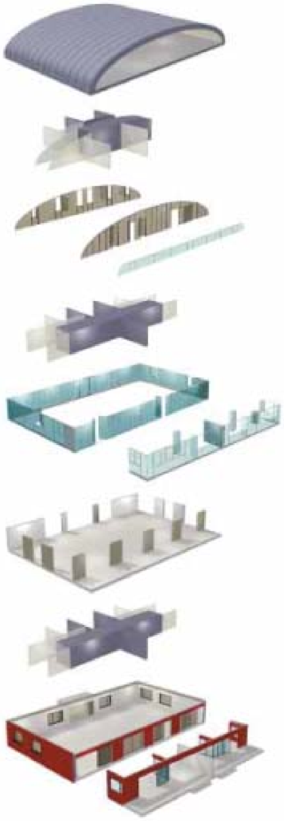
PHOTOGRAPHY: © ART GRAY (TOP); BENNY CHAN/FOTOWORKS (MIDDLE);
RENDERING: COURTESY XTEN ARCHITECTURE (BOTTOM)

developers could easily have interfered with the scenic surroundings. XTEN was short-listed by these developers when they presented a plan that, instead of tall buildings, consisted of nine separate low-rise structures. Häfelfinger explains how they took into account European ways of living during the planning stage. "It was necessary to integrate handicap accessibility into the design because it's not unusual for many generations to live together in Europe. An elder generation's needs are a factor. And, unlike gated communities commonly found in the States, the grounds are open, and nonresidents can pass through easily. The patio doors of the ground-level apartments open up onto communal space and walkways. There aren't any fences involved."

With himmelrain soon breaking ground and 90 percent of the units already sold, XTEN is looking forward to working on other large-scale projects that will explore experimental work. These ventures include a 60,000-square-foot boutique hotel and the renovation of a 1960s-era bank building, both in the Los Angeles area. Kelly adds, "Like many of our projects, XTEN is very much a work in progress." ***Randi Greenberg***

For more projects and photos of XTEN Architects and to find out how to submit your portfolio, go to archrecord.construction.com/archrecord2/

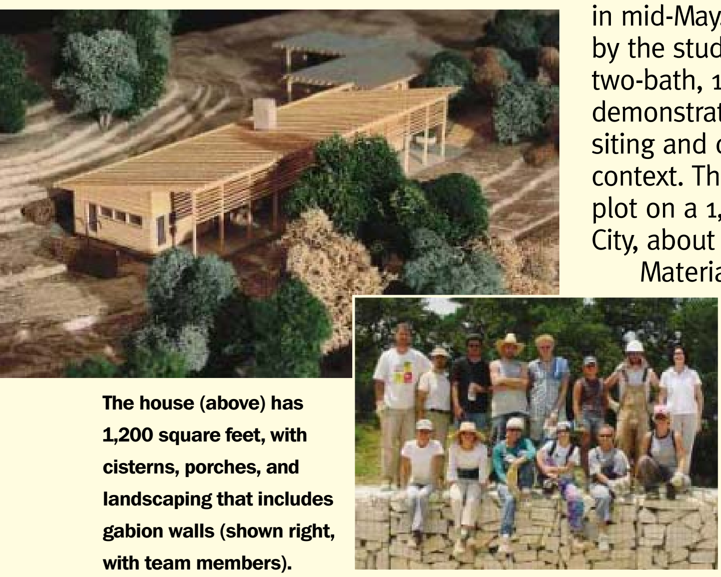




himmelrain, Sissach, Switzerland, 2004.
These tri-level apartment buildings will be clad in varied materials, including plaster, glass, and zinc. The facades will have the effect of reducing the scale of the buildings to better integrate with the landscape.

WORK

Students build from the ground up



The house (above) has 1,200 square feet, with cisterns, porches, and landscaping that includes gabion walls (shown right, with team members).

Eight graduate students, eight undergraduates, and one faculty member at the University of Texas at Austin have spent this summer under the blazing Texas sun, hard at work building a house. UT's School of Architecture's first design-build studio, called Design › Build › Texas, broke ground on the single-family residence in mid-May. Designed and constructed by the students, the two-bedroom, two-bath, 1,200-square-foot house will demonstrate environmentally sensitive siting and design within an affordable context. The house sits on a 1.5-acre plot on a 1,000-acre ranch in Johnson City, about an hour outside Austin.

Materials include wood and steel framing, precast and poured-in-place concrete, as well as rammed-earth and straw-bale construction. Photovoltaics, solar panels, rainwater collection, and other sustainable technologies will also be used. Once completed, the house will serve as guest quarters for the larger ranch, and will offer educational tours and events.

"This house is a model for an extreme area," says Louise Harpman, associate dean for undergraduate programs at UT, and the initiator of the project. The realization of Design › Build › Texas is a coup for Harpman. An eight-year veteran of Yale's School of Architecture, where she was the studio director for the Yale Building Project, Harpman came to Austin in the fall of 2003 hoping to accomplish what she could not at Yale. With a single donor giving the students land plus $120,000, and around 15 building-product donors stepping up to be involved, the program was a huge success. According to Harpman, it's the first of its kind. "Most university design-build programs build for a local not-for-profit, an agency, or a developer," she says. "For us, the demand of trying to 'sell' the house has been lifted. This is a true academic, experimental project, where the students can put all those things they've learned in class to the practical test."

With completion planned for early September, Harpman is now courting three possible donors for UT's next design-build studio, and she and the students have submitted the program to the U.S. Green Building Council as a replicable education prototype. ***Ingrid Whitehead***

There's more to this story—to find additional information and photos, go to our Web site: archrecord.construction.com/archrecord2/

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Redevelopment plans have long failed in Detroit. The newest round are different, but will they work?

Correspondent's File

By Kate Stohr

Developments like Max Fisher Hall (left) and the renovated Renaissance Center (right) are coupled with efforts to transform abandoned green spaces (center).

PHOTOGRAPHY: COURTESY DIAMOND + SCHMITT ARCHITECTS (LEFT); LOWELL BOILEAU (CENTER); SKIDMORE, OWINGS & MERRILL (RIGHT)

When it opened in 1977, Detroit's Renaissance Center was intended to herald, as its name implies, the revival of downtown Detroit. Thirty years later, the looming riverfront hotel complex overlooks an urban landscape pockmarked by majestic ruins, vacant lots, and underused infrastructure. Urban prairies grow in neighborhoods once inhabited by assembly-line workers and newly minted car barons (the city owns more than 40,000 vacant lots). Saplings have taken root between the rotting floorboards of arson-stricken buildings, and lonely patches of still-viable structures are surrounded by vacant and abandoned property.

Separated from the rest of Detroit's downtown by concrete berms and Jefferson Avenue, the center's six glass-plated towers struggled to retain tenants despite a round of renovations in the mid-1980s, and did little to stem the exodus from the city. And while the RenCen, as it has come to be called, still dominates the skyline, instead of encouraging investment, the isolated development has become a looming symbol of Detroit's many ill-fated revitalization attempts.

Now, courtesy of its new owner, General Motors, Renaissance Center is getting a much-needed overhaul. And with the Super Bowl coming to Detroit in 2006, the city is dangling incentives to many building owners to repair rundown facades, cracking down on building-code violations, and investing millions of dollars in streetscape improvements. At the same time, projects ranging from loft conversions to adaptive reuse of historic landmarks to the redevelopment of the city's waterfront have introduced a sense of steady progress after years of stop-and-go redevelopment efforts. This has left many to wonder: Is the city at last on the verge of a long-promised renaissance? Will the latest spate of rebuilding rekindle investment in Detroit, or will it be just another round in a seemingly Sisyphean battle to recapture the capital-of-the-car's once-vibrant past?

"There's a lot of buzz and enthusiasm coming up from the community," says AIA president Gene Hopkins, a Michigan native and a principal with the Detroit-based firm SmithGroup. He thinks the city's latest building push will be "contagious," and has made a point of taking AIA leaders on a tour of the city during his term. "You say 'Detroit,' and there's a lot of negative perception that comes up," he says. "A lot of people don't know Detroit. All they've heard is what it was like 20 years ago."

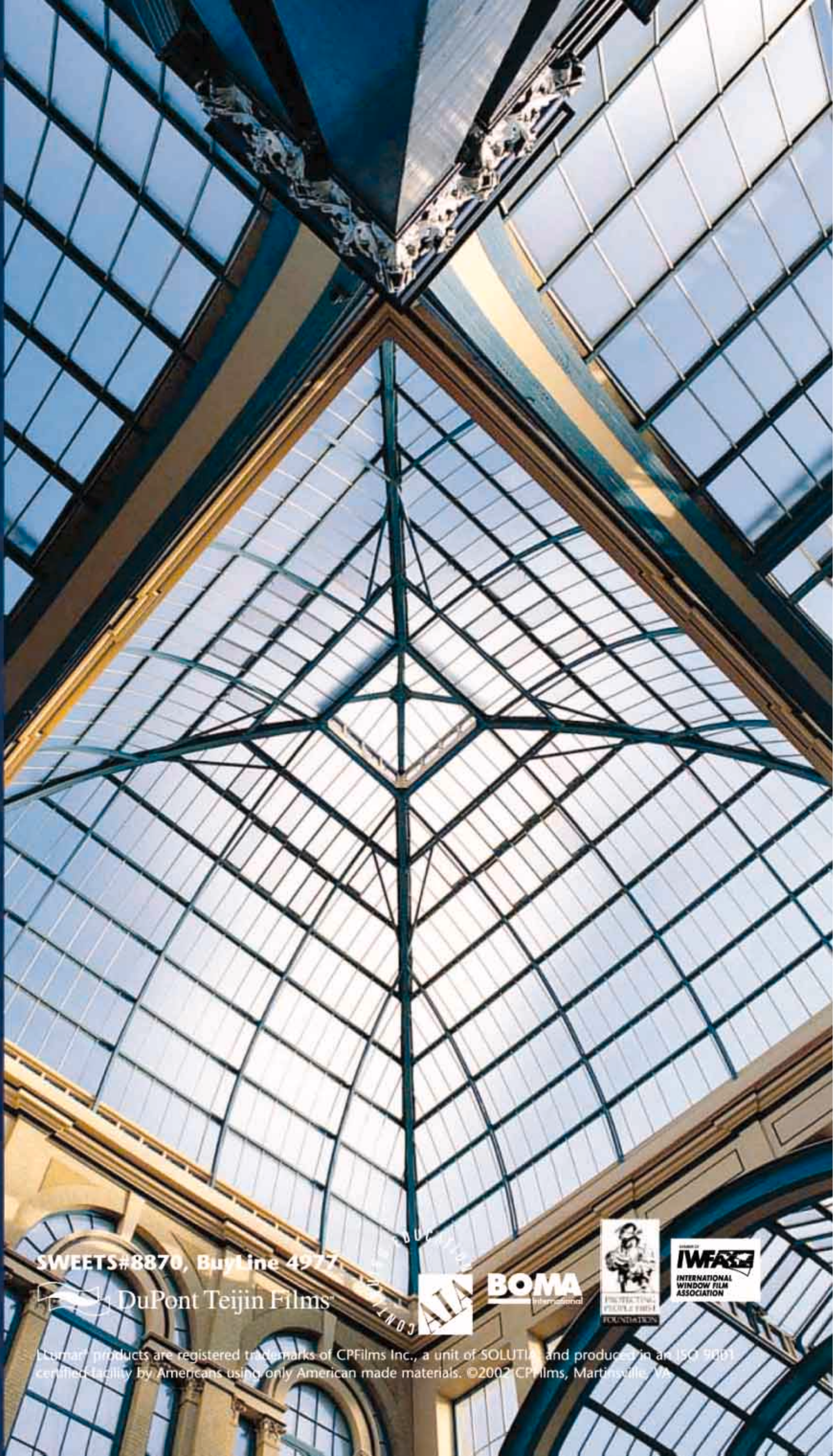
Detroit's rebirth has been proclaimed before. Over the years, the city has cycled through a series of stunted, sporadic, and often money-losing revitalization efforts, from slum clearance in the 1960s to a controversial new auto plant for General Motors in the 1980s. When the People Mover started its loop in downtown Detroit in 1987, the 2.9-mile monorail was to be phase one of a mass-transit project that would reconnect the city and its suburbs, but the planned light-rail connections were never built. Critics called the monorail (which still runs) an "elevator to nowhere."

The new millennium ushered in more sky-grabbing, big-ticket development: new stadiums for the Detroit Tigers and the Detroit Lions and an ongoing battle to build three casinos. Through it all, the city's vacancy rate continued to climb, and the city spent nearly as much demolishing buildings and maintaining abandoned parcels of land as it did on new investments.

Development, change, and rehabilitation

Still, the latest wave of building projects has instilled hope in even hardened skeptics. When General Motors acquired the 5.5-million-square-foot Renaissance Center for $75 million in 1996 and announced plans to invest another $500 million renovating the hotel and office complex, the decision represented more than just a financial commitment to the city. The automaker's decision to turn one of Detroit's

Kate Stohr is a freelance journalist and a cofounder of Architecture For Humanity.

CAPTURING
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most maligned icons into its global headquarters seemed emblematic of a citywide shift to revitalize and link together existing structures rather than begin anew, as developers had done in the past.

Seven years later, the project, headed by the Chicago office of Skidmore, Owings & Merrill (SOM), is 90 percent complete. The complex's vine-covered berms have been replaced by a stainless-steel and glass facade. A winter garden provides space for quiet lunches and congregation, while the center's original maze of confusing passageways has given way to a glass circulation ring and better way-finding. The goal, says SOM partner Richard Tomlinson, was to integrate the complex into the surrounding city, and in particular the waterfront, which is undergoing a dramatic overhaul, part of a slew of new projects.

For example, with public and private funds, the Detroit Riverfront Conservancy has begun to convert the city's industrial waterfront into a 4.5-mile sliver of bike paths, skateboard parks, and fishing areas, dubbed the RiverWalk. The plan also includes turning abandoned cement silos into art installations.

Last fall, Compuware moved into its new headquarters. The company's 15-story office tower, designed by Rossetti Associates, is part of a larger redevelopment called Campus Martius, which is intended to rekindle pedestrian life. The five-block, 9.2-acre, mixed-use development is scheduled to open late this year and will include office space, restaurants, and retail as well as a hotel and loft-style apartments, all anchored by a public square, including a band shell and an ice-skating rink.

The Detroit Riverfront Conservancy has begun to convert the city's industrial waterfront into a 4.5-mile RiverWalk.

IMAGE: COURTESY SMITHGROUP

Meanwhile, the Detroit Symphony Orchestra opened the Max M. Fisher Music Center, designed by Diamond and Schmitt Architects, in October 2003. The $60 million rehearsal and performance space is an addition to the acoustically acclaimed Orchestra Hall, which was rescued from the wrecking ball in 1989. It is part of a three-phase plan to revitalize its Woodward Corridor neighborhood.

Developers have also made strides in restoring what remains of the city's architectural legacy, including pre-Depression-era Albert Kahn skyscrapers, plush Jazz Age movie palaces, Gothic Revival mansions, and Prairie Style homes (ghostly reminders of more prosperous times), many of which have been abandoned and derelict for decades. For instance, the Fox,

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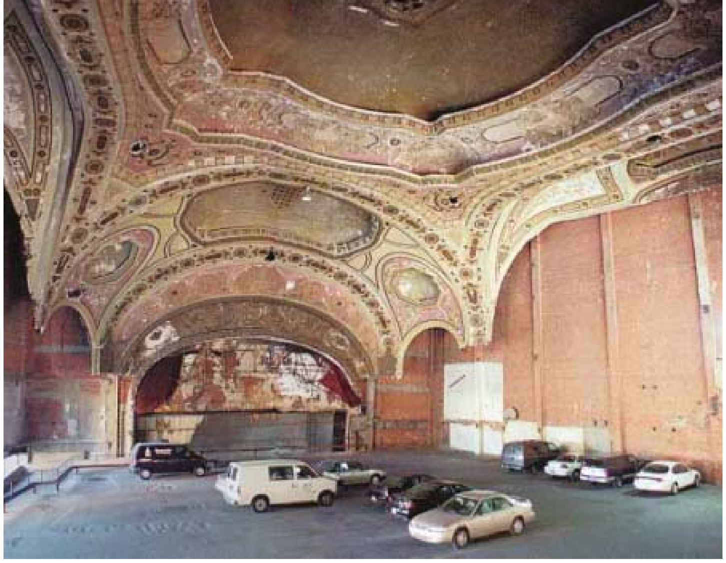

Creative reuse: The Michigan Theater has been converted into a parking lot.

PHOTOGRAPHY: © LOWELL BOILEAU

Gem, and Capitol theaters have been restored and now form the heart of a new entertainment district. In addition, Schervish Vogel Consulting Architects has restored nine historic buildings in the city's Harmonie Park.

Change is also creeping into a few of the city's more desirable neighborhoods, thanks to speculation and investment in these areas. Between 2000 and 2003, building permits for single-family homes tripled, and real estate values are on the rise for the first time in decades as pioneers move into the city's historic districts and into Midtown loft conversions.

Looking beyond development

Yet even as Detroit's long urban winter may at last be thawing, there is no guarantee the city's remaining landmarks will survive its latest renaissance, or that its empty spaces will be filled with architectural works befitting its heyday. The administration has called for 13 of the city's most prominent ruins to be renovated or demolished before the Super Bowl kicks off in 2006. But despite new tax credits and other state and federal incentives, the cost of building and renovating existing structures can still outpace market values. More critically, Detroit continues to hemorrhage people. Between 2000 and 2003 alone, the city's overall population fell by 30,000, and it has shrunk from nearly 2 million in the 1950s to 911,000 today.

Thus, while subsidized investments may be helping to reconfigure Detroit's skyline, there are some who question whether rebuilding alone is the answer. The biggest challenge for planners remains knitting together the city's sprawling, frayed, and isolated neighborhoods. As the population has shrunk, so has the city's tax base. In much of Detroit, it is common to find a single home standing on what was once a lively residential block. Basic services such as dry-cleaning, supermarkets, and restaurants can be few and far between. In some neighborhoods, liquor stores often double as food marts. Garbage pick-up is erratic, while power outages happen regularly.

"In my lifetime, I don't think Detroit will ever get near the population it used to have," says Vogel. "In the meantime, what does one do?"

It's a question that is being asked not just in Detroit but in cities around the world. In January, Shrinking Cities, a Berlin-based group, launched a competition to address blight and abandonment in cities that have suffered dramatic shifts in population. The project, which was inspired by the massive exodus from East Germany following

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the fall of the Berlin Wall, will look at the effects of depopulation in four postindustrial regions: Manchester and Liverpool in the United Kingdom; Ivanovo, Russia; the Halle-Leipzig area of Germany; and Detroit.

Research is already in progress, and an exhibition is planned for September in Berlin. The show will include responses to abandonment, from failed urban revitalization projects—such as the "illuminated fields" in the former East Germany, where planners built the footprint of a community hoping to attract investment that never came—to survival farming in Ivanovo, Russia.

> **"WE NEED TO LOOK AT DETROIT AND OTHER SHRINKING CITIES IN MORE THAN JUST A NEGATIVE WAY."—DAN PITERA**

"We need to look at Detroit and other shrinking cities in more than just a negative way," says Dan Pitera, AIA, director of the Detroit Collaborative Design Center at the University of Detroit Mercy and one of the curators representing Detroit.

Rather than "filling in the gaps" and recreating the city in an image of its past, he sees the potential to forge a new kind of urban experience, one that does not mimic the density of cities like New York or Tokyo, but rather recasts the city's negative spaces in a positive light.

"Instead of trying to refill that space, what if all that land became meandering parks around the city?" he asks. "Perhaps there's something more dynamic that could occur that could not happen in any other city of this scale."

In fact, in 2000, the Detroit Collaborative Design Center helped draw a vision for the city's East Side along these lines. Recognizing a grassroots movement to plant vegetable gardens and community farms on abandoned lots, the plan, called Adamah ("of the earth" in Hebrew), envisioned green spaces and small-scale agricultural industries mixed with high-density residential development in a neighborhood with one of the highest rates of abandonment in the city.

Meanwhile, artist Tyree Guyton's Heidelberg Project, a collection of abandoned homes painted in polka dots to protest the neglect of Detroit's near East Side, is one of the city's most visited tourist attractions, despite successful attempts by the city to tear down parts of the sprawling art project on two separate occasions. Closer to Downtown, Andrew Zago's park pavilion for the Greening of Detroit, a simple shelter made of steel and plastic tubing that acts as a gathering spot, has inspired a sense of community building and possibility. At the same time, some of the city's most blighted buildings have acquired a certain post-apocalyptic cache. The United Artists Building, with its individually tagged windows, has become an urban canvas, and the Michigan Theater, now an immense private parking garage, was immortalized in the Eminem biopic *8 Mile*.

Still, as city planners are quick to point out, developing the city's urban prairies into green spaces and art installations does little to bolster tax rolls. "Green space development is wonderful," says chief city planner George Dunbar, but he says the city's goal remains to attract new residents and development. "It's time for new growth."

Weighing in on the other side, Pitera says, "We have an opportunity to make a great city again. But my point is how do we make this shift and do thoughtful interventions in our environment. Not all building is good building." A point those who lived through Detroit's last renaissance understand only too well. ■

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When good architects design bad buildings: Beauty trumps ethics

Critique

By Michael Sorkin

The first architectural protest demonstration I remember joining was organized by a group called the Architects Resistance. It took place in front of the offices of a prominent architectural firm in New York and was aimed at the firm's work on a mixed-use office tower in Johannesburg. I don't remember much about the event itself, but the leaflet that was being handed out asserted (and I paraphrase) that somewhere in the drafting room above, there was an architect designing two sets of bathrooms, one for blacks and one for whites.

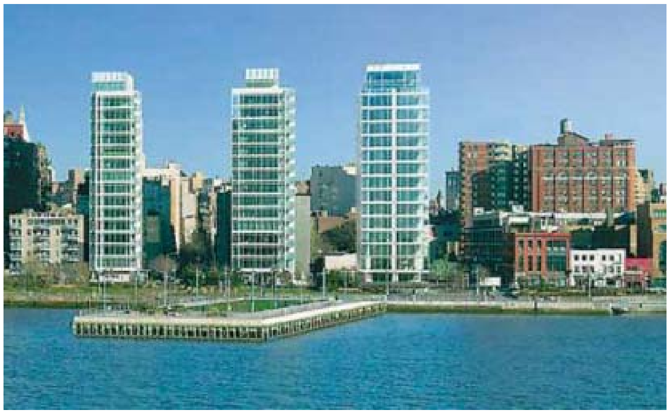
The ethical case seemed very clear: Here was a piece of architecture that—in the most nitty-gritty part of its program—was racist. But architects are rarely confronted with an ethical dilemma as sharp and functional as this. Our dilemmas tend to be either more ambiguous (ideas about appropriateness) or more general (supporting the machine that allows us to consume our disproportionate share of planetary resources). And, the whole thing is contaminated—as Robert Campbell pointed out on these pages [RECORD, May 2004, page 67]—by a habitual distinction between the ethical and the imaginative, posed as if they were in opposition, some sort of zero-sum proposition.

The core of the ethical performance of a building lies in its program, and we must take responsibility for a building's behavior as well as its artistic presence. Indeed, "good design" is often a cover for the ethically questionable; witness the old saw, "If you want to build a bad building, hire a good architect. And if you want to build an outrageous building, hire a distinguished architect." The most outstanding instance of this tactic is, of course, Ground Zero, where "distinguished" architecture has been used to con the public into supporting a massive office scheme. But there are other examples, as well. Suddenly, after years of disheartening indifference, the city is awash with proposals by global star architects, and a clear majority seem to be involved in leveraging projects of dubious ethical provenance.

Sins against neighborliness

To be sure, none of these projects houses a program—like apartheid—that rises to the level of the truly reprehensible. And it is also true that recent theorization of architecture tends to locate ethical content in places too small to support it, belaboring expression while taking too little interest in effects. Most of the infractions today are sins against neighborliness and comity, in which the presumed vision of the architect trumps (and often Trumps) any sense of obligation to existing communities and compacts.

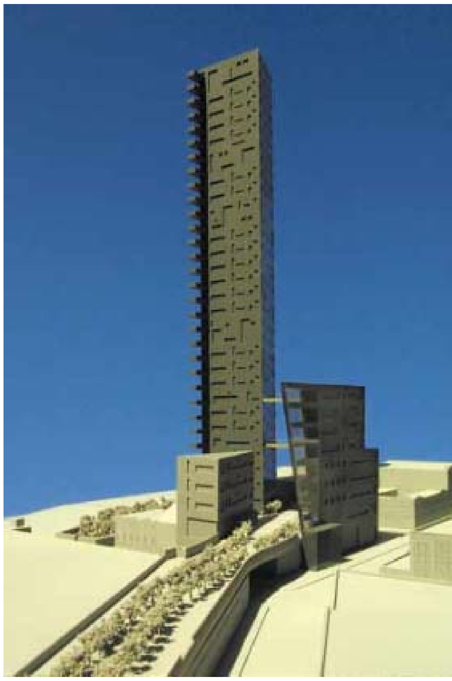
This is murky territory. We all agree that we shouldn't be designing concentration camps. And, we all agree that an architect is obligated to see to the safety of the occupants of his or her project, whether by assuring egress, avoiding toxic materials, or resisting seismic loads. We are also agreed, in more general terms, about our duties to the planet, however they may be fulfilled in the form of lip service and window dressing, like those windmills Kohn Pedersen Fox (KPF) has put on the hulking proposal for the Jets Stadium giveaway in Manhattan, or those that Skidmore, Owings & Merrill may or may not intend for the ridiculous Freedom Tower. Of course, no one discusses the energy savings that might be realized by not building these two white elephants.



A trio of apartment towers on the Hudson River (left) by Richard Meier are elegant but break the scale of the neighborhood, as does a proposed tower by Jean Nouvel in the Meatpacking District (below), which never got approval.

Agreeing on values

Architecture does not create community, but it can provide a setting conducive to the playing out of collective values. Despite fatuous claims that the genius of the city lies simply in its wanton dynamism, historic cities like New York are the records of compact and consent, public agreements about values worth preserving, whether in individual buildings, neighborhoods, or in the security of individual members



Contributing editor Michael Sorkin practices architecture in New York City and is the director of the graduate urban design program at City College of New York.

IMAGES: COURTESY RICHARD MEIER & PARTNERS (TOP); LANDMARK DEVELOPMENT (BOTTOM)

of the commune. In New York, as in many places, architecture acts within a dialectic between gentrification ("development") and our historic rent laws that seek to codify and defend a diversity in which the market takes no interest. In many communities, including my own in Manhattan, these laws are the only thing preserving a mix of people of varying incomes; without them, market forces would push out the less affluent in favor of an upper-class monochrome.

An implicit agreement

Where should we draw the line on the architect's complicity? The big planning argument in my neighborhood these days is over a dramatic upscaling of the Hudson River waterfront. The poster children for this are two (soon to be three) apartment buildings by Richard Meier, whom many activists identify as Public Enemy Number One. I am less disturbed than many of my neighbors by the sleek white towers, which—although focused on the river view—have fairly brutal concrete elevations to the neighborhood out back. I am less enthusiastic about their lack of sun control on their glassy western elevations (just add a few more tons of a/c) and don't quite see why there need to be three.

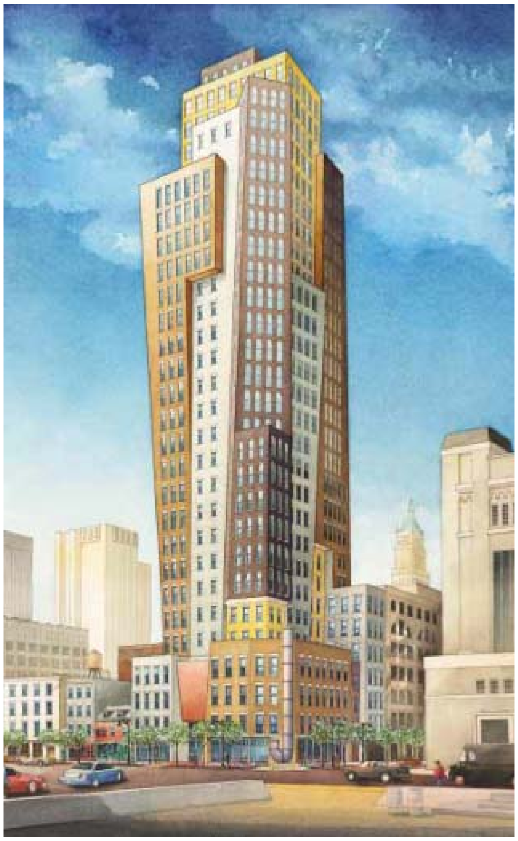
The point, though, is that these buildings embody a proposition about the scale and character of place, on which the architect has implicitly signed off. I believe that this entails, at the very least, a burden of explanation, an argument why this transformation is a good thing.

THE PREEMINENT VALUE OF THE GOOD CITY LIES IN ITS NEIGHBORLINESS, ITS RESPECT FOR THE OTHER.

About 20 blocks south of the Meier towers, Norman Foster has proposed an apartment building that sits between two much-used neighborhood parks. Here, scale is also an issue, although for very different reasons. Because of its size, the tower will cast shadows on these parks, some sports fields, and three schools—one side in the morning and the other in the afternoon. Given the scarcity of public open space in the neighborhood, this is a very serious matter, one on which a conscientious architect should have an opinion. Of course, it may be that the big tower is a stalking horse, providing wiggle room for scaling back to something more "reasonable" when public protests arise. But should architects facilitate such gamesmanship? Should they ever produce projects that, if built, would have a clearly deleterious effect on a neighborhood?

Making exceptions

The same question arose a few years ago concerning a project by Jean Nouvel for a hotel in the Meatpacking District, not far from the Meier condos. Here the issue was the great height of the engagingly slim tower in a district whose relic texture—key to its character—is predominantly two stories. While the project was a prima facie violation of context, its proponents used the argument—a classic of the false opposition between the ethical and imaginative—that the tower was sufficiently exceptional as to excuse trodding on the existing convention of scale. Fortunately, public opposition shot down the too-big project, much as it did a particularly awful one by Philip Johnson/Alan Ritchie Architects 15 blocks south of there. The developer of the overbearing Johnson project tried to sell it by papering the community with posters describing it as a "vertical work of art," the mantle of artistry again conferring the right to its narcissism of scale.



The developer argued that this tower by Philip Johnson was "art," but the public didn't approve.

Over in Queens, design is well advanced on New York's first project by Richard Rogers, a building for Silvercup Studios, a motion-picture-production facility. Located on the East River, directly south of the beautiful Queensborough Bridge, this building—a Beaubourg-like podium housing the film studios and three very tall towers on top—will irrevocably destroy the bridge's breathing space. A handsome span now visible in its all-at-once-ness will forever be placed in ensemble with this big new structure, which—however elegant it might be on some other site—will eternally alter (*ruin* is perhaps a better word) a view that has been part of our civic imagination for a century.

The same effect is produced by two mindless buildings—one by KPF, the other by Kevin Roche—recently completed by New York University just south of Washington Square. The KPF item, an addition to the law school, sits directly behind McKim, Mead and White's fabulous Judson Church. The giant, new, redbrick lump—for which a house once occupied by Edgar Allen Poe was torn down (and whose facade has been saved as merely a decorative relic)—has now also destroyed the beautiful profile of the church spire against the sky.

The horrible Roche building contributes to the dramatic upscaling of its street (a process begun years ago by Philip Johnson's mammoth university library) and has the same effect on the Washington Square Arch as the KPF building does on Judson Church. From far up Fifth Avenue, the beloved arch (just restored) is overwhelmed by the lumpy limestone mass of the Roche building, which arrogantly insinuates itself into a stirring and measured public space.

A texture of forgetting

Jane Jacobs's new book, *Dark Age Ahead*, describes the way cultures forget their own values and offers a cautionary tale of how quickly this can happen. The projects I've mentioned all contribute to this texture of forgetting. Cities are civilization's mnemonic, a contract in stone between past and future. The preeminent value of the good city lies in its neighborliness, its respect for the other, for existing and historic patterns of life. In my last piece [RECORD, June 2004, page 117], I wrote of the difficulty of imposing collective symbols on communities in fundamental disagreement. The ethics of architecture requires loving your neighbor, not dictating to her. This means some circumspection about designing mausoleums of good intentions and casting shadows in other people's gardens. ■

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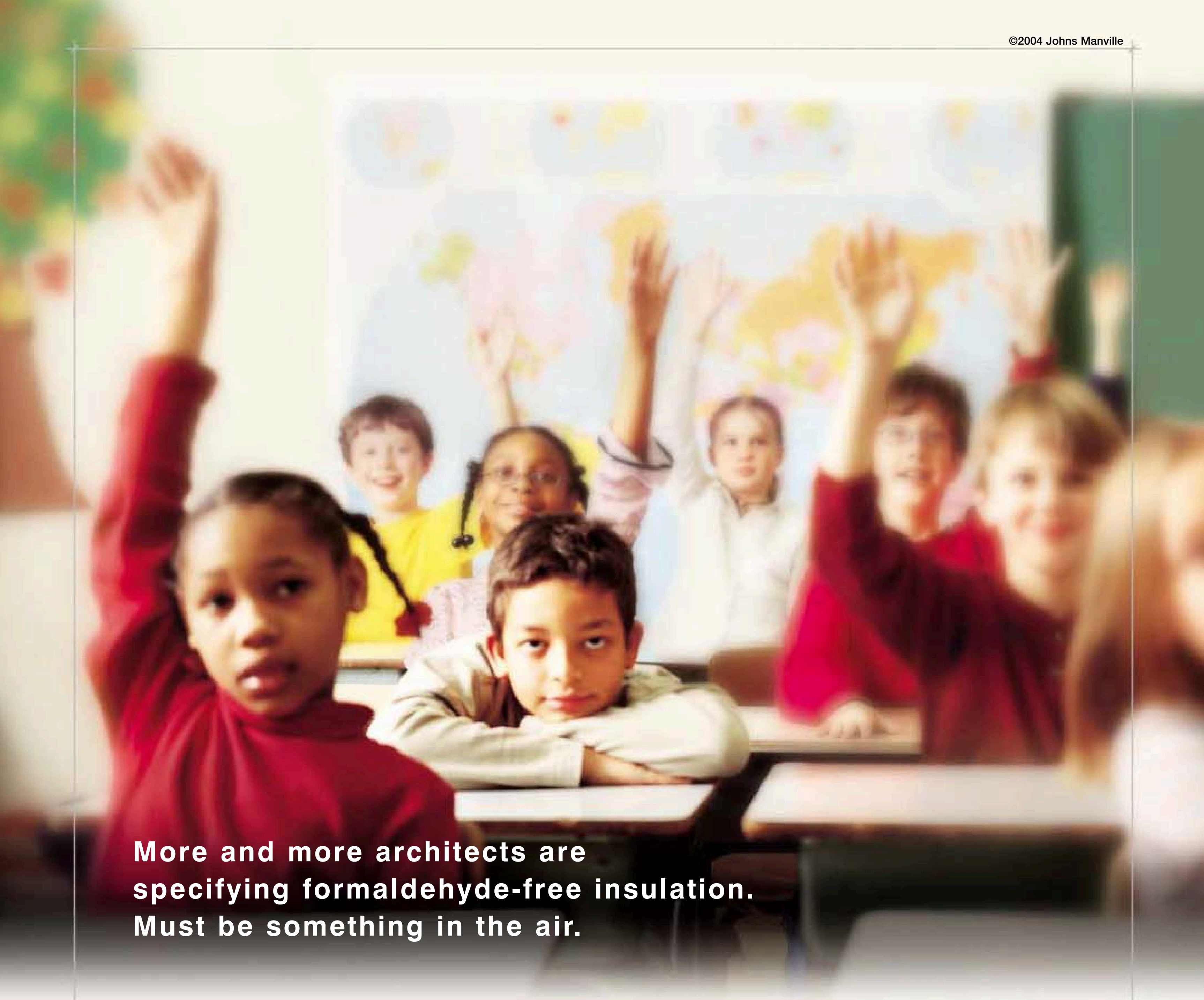

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It's Comforting to Know We're There.

Jerusalem needs a Museum of Tolerance right now

By Rabbi Marvin Hier

In his June 2004 Critique column, Michael Sorkin examined plans for a Museum of Tolerance in Jerusalem, designed by Frank Gehry. Sorkin criticized the politics and symbolism of the project at a time when Israel is building a controversial "security fence," and questioned Gehry's involvement. Rabbi Marvin Hier, the client for the museum, responds below.

Rather than an architect's critique of Frank Gehry's brilliant design of our Museum of Tolerance Jerusalem, Sorkin offers a political attack on Gehry's right to participate in the project in the first place. He writes, "It is not possible to build this project without an opinion on larger issues—real issues of tolerance—in the region. What is Gehry's? This is not a question of the use of titanium versus Jerusalem stone, it is one of justice."

Rabbi Marvin Hier is the founder and dean of the Simon Wiesenthal Center and the Museum of Tolerance.

Why do I shudder when I hear such words, especially from people eager to be viewed as benevolent, peaceful, and honest? Because it reeks of McCarthyism, demanding that artists declare themselves publicly by saying, "It's okay to let me in, I am one of you, I am not the enemy." Perhaps actors should be given scripts only if they first declare themselves as Democrats, and people who work for banks or oil companies, only if they can prove their credentials as Republicans.

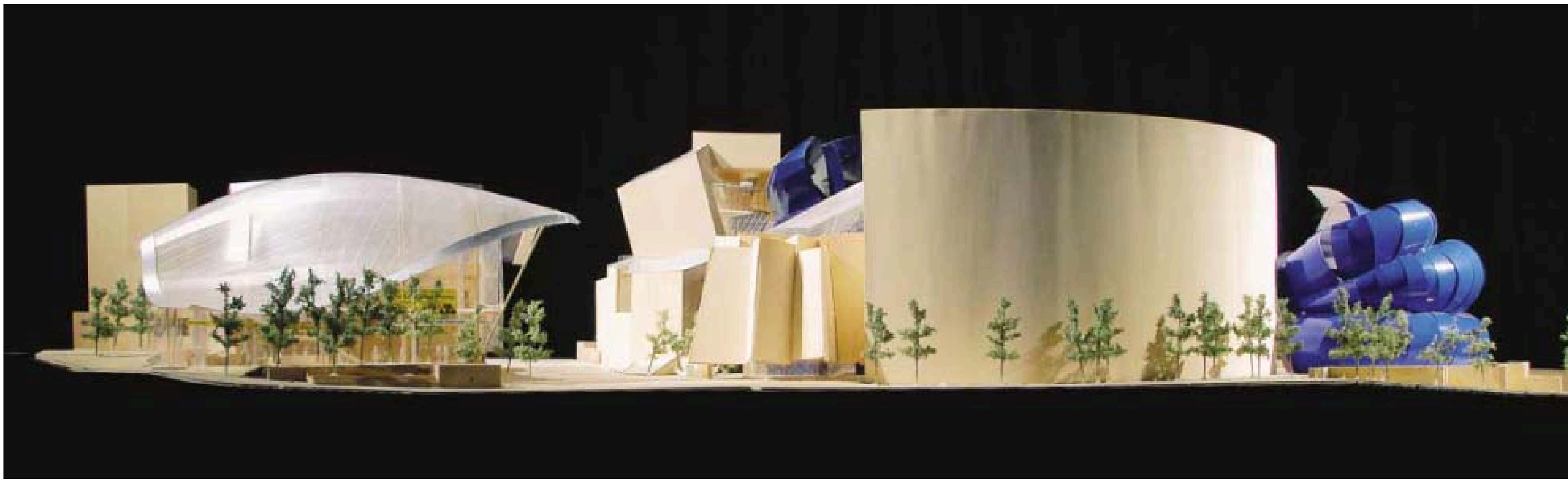
To grant permits on the basis of how one votes or feels on issues, or the way a particular group interprets justice, is a sure recipe for anarchy. Today, Sorkin's argument against Gehry's participation is that you cannot separate the security fence Israel is building from the Museum of Tolerance Jerusalem. Perhaps tomorrow, others will deny architects or teachers commissions because they were either for or against the death penalty, or because they accept or don't accept same-sex marriages. To me, such pre-positioning brings back the worst of our past, sowing distrust, hatred, and division, while the self-righteous search everywhere for the enemy amongst us, under the guise of human rights. It is a cynical and slippery slope to insert politics and polemics into a project whose sole purpose is to raise the threshold of decency and dignity among the people of Israel.

We should not have to pay the price of solving the Arab-Israeli conflict as a prerequisite before some self-appointed high priests grant us the right to build the Museum of Tolerance in Jerusalem. The lessons of tolerance and respect for others were needed before the intifada began and will surely be needed when it ends.

Which brings me to my second point. To Michael Sorkin, everyone connected with the Museum of Tolerance Jerusalem has an agenda: the Simon Wiesenthal Center, Frank Gehry, and Ehud Olmert, the former mayor of Jerusalem, now vice prime minister of Israel. But isn't it fair to ask, what about Sorkin himself? Could he have an agenda? And the critics he cites, like Meron Benvenisti and Esther Zandberg, do they have agendas, as well?

For example, Sorkin failed to mention that he organized a design conference on Jerusalem and the West Bank and edited a book called *The Next Jerusalem: Sharing the Divided City* (2002). What if we judge Sorkin in the same manner that he judged Gehry, and charge him with propping up and legitimizing Arafat and the Palestinian suicide bombers? Would that be fair?

Then there is Esther Zandberg, the Tel Aviv–based architecture critic of *Haaretz*, who I suspect really prefers being a political commentator, because the first time I met her after a press conference in Jerusalem, she insisted, "We don't



The Museum of Tolerance Jerusalem, designed by Frank Gehry, has become the focus of a charged debate on design and politics. Construction began in May.

PHOTOGRAPHY: COURTESY GEHRY PARTNERS

need a Museum of Tolerance here. Israel knows what it has to do to achieve tolerance. It should withdraw to the June '67 borders." I asked her, "What does that have to do with our project or with architecture?" There you have it again—Sorkin's "without an opinion on larger issues."

Now for some factual errors.

1. Sorkin writes that originally the Museum of Tolerance Jerusalem planned Holocaust exhibits. Not true! Out of respect to Yad Vashem, no exhibits on the Holocaust were ever planned or even discussed.

2. He quotes Zandberg as being miffed because we "refused to make plans and images of the project public despite their having been published in 2002 in the Japanese magazine *GA*." Again, not true! The Museum of Tolerance Jerusalem had no idea that any photos were provided to a Japanese magazine—they never came from the Simon Wiesenthal Center. The center did release all the photos in Israel, and the model of the Gehry project remained in Israel at Jerusalem City Hall, where residents of the city could see it for themselves. It's revealing that neither Sorkin nor Benvenisti or Zandberg ever make mention of the 300 Israeli architects who attended Gehry's lecture on the project in Jerusalem, where both he and the project were very well received.

THE MUSEUM OF TOLERANCE DOES NOT HAVE THE LUXURY TO WAIT UNTIL ALL THE GREAT ISSUES ARE RESOLVED.

3. Benvenisti asserts that the museum is "planted on part of an ancient Muslim cemetery." This is absolutely not true! No portion of the Museum of Tolerance Jerusalem complex is being built on a Muslim cemetery.

Finally, as Israel confronts the 21st century, what greater need is there than to address the great internal divide that separates Jews from Jews and that has the potential to implode the country from within? The Museum of Tolerance Jerusalem does not have the luxury to wait until all the great issues are resolved. We are not the government of Israel, and only a government has the wherewithal and responsibility to make peace.

The museum's role is to reach out and teach tolerance one step at a time—between the religious and the secular, between Sephardim and Ashkenazim, between the haves and the have nots, between Jews and their Christian and Muslim neighbors. For 11 years, that is what the Museum of Tolerance in Los Angeles has been doing. More than four million visitors have experienced the museum. Its acclaimed Tools for Tolerance for Professionals programs have trained 60,000 police and 30,000 educators on issues of tolerance and diversity. More than 110,000 high school students come to the museum every year.

Can you imagine the potential of a complex that will house two Museums of Tolerance, one for adults and one specifically for children; an international conference center that will host scholars and delegates from around the world; an education center where outstanding teachers will conduct daily classes and seminars; a theater for the performing arts that will screen important films and host lectures; and a grand hall that will become the "living room" of Jerusalem? This project is far too important and vital to Israel's future to be sidetracked by internal bickering, professional envy, or philosophical posturing that can't hold a candle to the need to have such a museum built as soon as possible. ■

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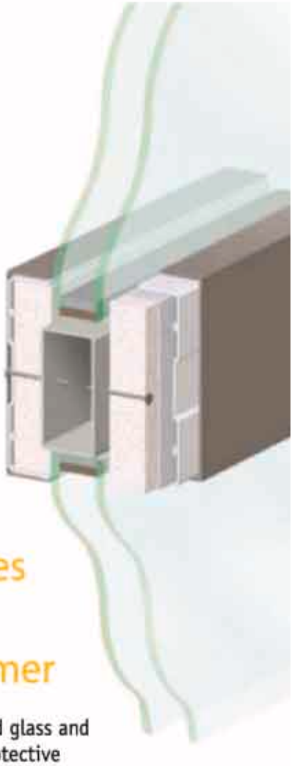

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A new memorial squanders a sparkling opportunity

Commentary

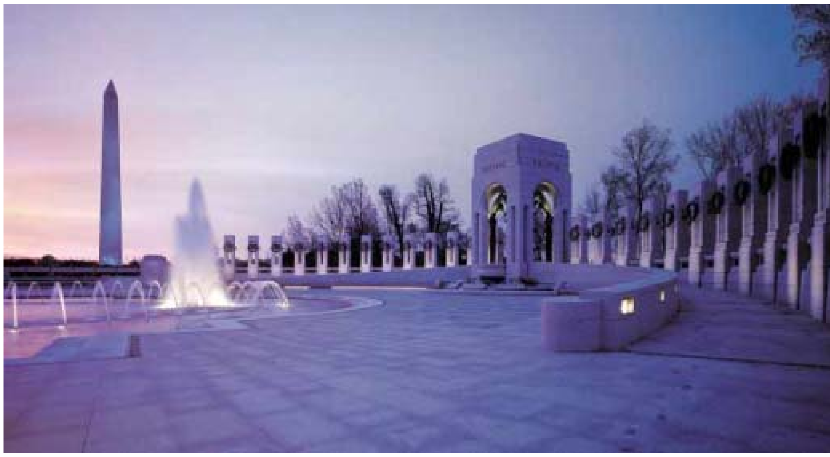
By Paula Deitz

On Memorial Day weekend this year, I attended a family burial in a small New England cemetery on the coast of Maine. As we arrived, several young men from the town jumped out of pickup trucks with stacks of American flags and proceeded to place them in metal holders by designated graves—an annual ritual to honor those who served their country. We requested one for the fresh grave of our relative, a veteran of World War II, thus entering him on the list of those to be remembered or memorialized in perpetuity by the community.

The next day, driving back through the countryside, we observed these flag-dotted cemeteries repeated in every town and village. As we passed by these tranquil local scenes of remembrance that stretch across America, the world was given its first views of the more grandiose national World War II Memorial at its dedication on the Mall in Washington, D.C. Although this project, controversial in the design stage, had been in the works since 1993, when Congress authorized the creation of the memorial, the stark reality of its presence raises serious questions about both its design and appropriateness.

A few words first about the site. With the exception of the Washington Monument, completed in 1885, the creation of the Mall on former marshland was a 20th-century concept (though originally envisioned in Pierre Charles L'Enfant's 1792 plan). In 1901, the Senate Park Commission located Henry Bacon's Lincoln Memorial at the west end and called for a long Versailles-like canal with a cross arm and a terminal pool. By the time the tree-lined Reflecting Pool was constructed in 1923, temporary War and Navy buildings installed along the Mall eliminated the possibility of a cross canal. However, the final ellipse was built, and called the Rainbow Pool for the showy effects of sunlight on its tall jets of water. In 1995, the Commission on Fine Arts selected it as the location for the World War II Memorial. First designated for presidential memorials, the Mall was subverted into war memorials with the completion in 1982 of Maya Lin's understated, contemplative Vietnam Veterans Memorial. When another memorial was built for Korean War Veterans, the pressure to seek national recognition for World War II was inevitable.

Before arriving at the World War II Memorial, it is instructive for the visitor to begin at the Jefferson Memorial, itself only completed in 1943 in John Russell Pope's Roman style. From there, following the cherry tree promenade around the Tidal Basin, one approaches a path that flows through the Franklin Delano Roosevelt Memorial integrated into the parkland. Before it opened in 1997, its designer, the landscape architect Lawrence Halprin, had worked for 20 years sketching the rough pink granite walls of open rooms representing Roosevelt's four terms. A series of waterfalls increase in chaotic ruggedness and torrential foam to form a crescendo in the "War Room Fountain." Inscribed in stone is Roosevelt's "I have seen war. I have seen blood running from the wounded … I have seen cities destroyed … I hate war." The last phrase is repeated on broken stones piled on the ground.



At dusk the World War II Memorial's surfaces do not reflect the same "blinding whiteness" as they do during the day.

PHOTOGRAPHY: © ROBERT LAUTMAN FOR THE OFFICE OF THE CHIEF ARCHITECT/GSA

With this grim reality of war in mind, it comes as a shock a short walk beyond to encounter the pristine blandness of the facing pylons that form the main structures of the World War II Memorial: two semicircles of slotted pillars, representing states and territories, with central triumphal arches symbolic of the European and Pacific-Asiatica theaters of war. These are set around an immense elliptical, two-toned granite plaza with, at its center, a sunken reincarnation of the Rainbow Pool and its waterworks. Designed by Providence, Rhode Island, architect Friedrich St. Florian, the quasi-Classical style he chose to employ celebrates victory more than it commemorates individual sacrifice—a morale booster for a country that was never to know that kind of clear-cut victory again.

One need only recall the dignity of the Tomb of the Unknown Soldier in Arlington Cemetery or the subtle architectural expression of Sir Edwin Lutyens's Cenotaph in London, both drawn from the Classical tradition, to know everything that the World War II Memorial is not. Though some have likened its scale and form to the overbearing public architecture of Germany and Italy between the wars, in truth, St. Florian's design lacks any sense of style or imagination. For example, whether Classical or Modern, architecture should articulate or modulate through contour a sense of light and shadow to achieve a modicum of elegance. The characterless, blocky surfaces of the memorial's structures and the over-

Paula Deitz is editor of The Hudson Review.

size open plaza radiate a blinding whiteness, particularly notable in Washington's humid summer heat. Whereas the Roosevelt Memorial allows the visitor to think between inscriptions and episodes and the Lincoln Memorial offers the cool majesty of a Greek temple interior, here there is no relief from the onslaught of words and symbols.

An architecture professor at the Rhode Island School of Design, St. Florian tends to exaggerated, overscaled designs that may succeed in locations like Waterplace Park in Providence, where he joined three department stores under one roof in his Providence Place Mall, with its three-story-high Winter Garden. But despite the efforts of the Commission on Fine Arts to scale down the war memorial to something less monumental, the effect is still overly heavy. It might have been better to leave the original arcade that was transposed into meaningless, elevated pillars tied together by a bronze rope and ornamented with heavy, door-knockerlike bronze victory wreaths of wheat or oak leaves. An even larger wreath of laurel appears under the arches suspended horizontally by the beaks of four bronze American eagles, forming a kind of canopy or baldacchino.

For all St. Florian's stated objective to respect the "utopian spirit" of Washington's "preeminence of Classical architecture," the design misses by a wide mark that breathtaking creative artistry and spirituality required for so important an occasion. Also, he chose to open the elliptical formation of pillars onto a slanted esplanade to 17th Street, thus turning the memorial's back on the Reflecting Pool, entry from which would have been the more poetic solution. Where hushed reverence is called for, there is instead a vast playground of a plaza with children wading in the pool between jets of water. And tour bus groups line up to be photographed beside their state pillars.

With regard to the Freedom Wall that encloses the memorial on the west side, it features a panorama of 4,000 gold stars on a dark blue ground representing the 400,000 service people who lost their lives. During World War II, every family that lost a father, husband, or son was given a square navy blue banner with a single gold star to hang in the front window. That star became an expression of grief for an entire neighborhood and made everyone, including school children passing by each day, sad witnesses to the sacrifice of war. Multiplying it into a field of stars is an effrontery that dilutes the power of that remembered symbol.

Is there anything good about the World War II Memorial? Yes, some of the surrounding landscaping by James A. van Sweden, with greenswards at the sloping entrance as an attempt to marry the architecture to the Mall, and including the restoration of the double allées of elms along the Reflecting Pool that make it as grand as the tree-lined canal at Courances in France. But also the double flag poles at the entrance that would have been sufficient unto themselves with nothing more than a dramatic water feature tumbling into the Reflecting Pool. Like twin masts, they are set into circular granite bases with the seals of the branches of the armed services in bronze and a simple inscribed message: "Americans came to liberate, not to conquer, to restore freedom and to end tyranny." That says it all. Perhaps a dark blue flag with one gold star could have been flown beneath the stars and stripes. Given such a lone inspirational image, one would almost hear the bugler sounding taps. But for now, the Roosevelt Memorial, with its contemplative atmosphere and symbolic representation of war and sacrifice, would appear to be the true World War II Memorial, as is that rural seaside cemetery in Maine and its like across America. ■

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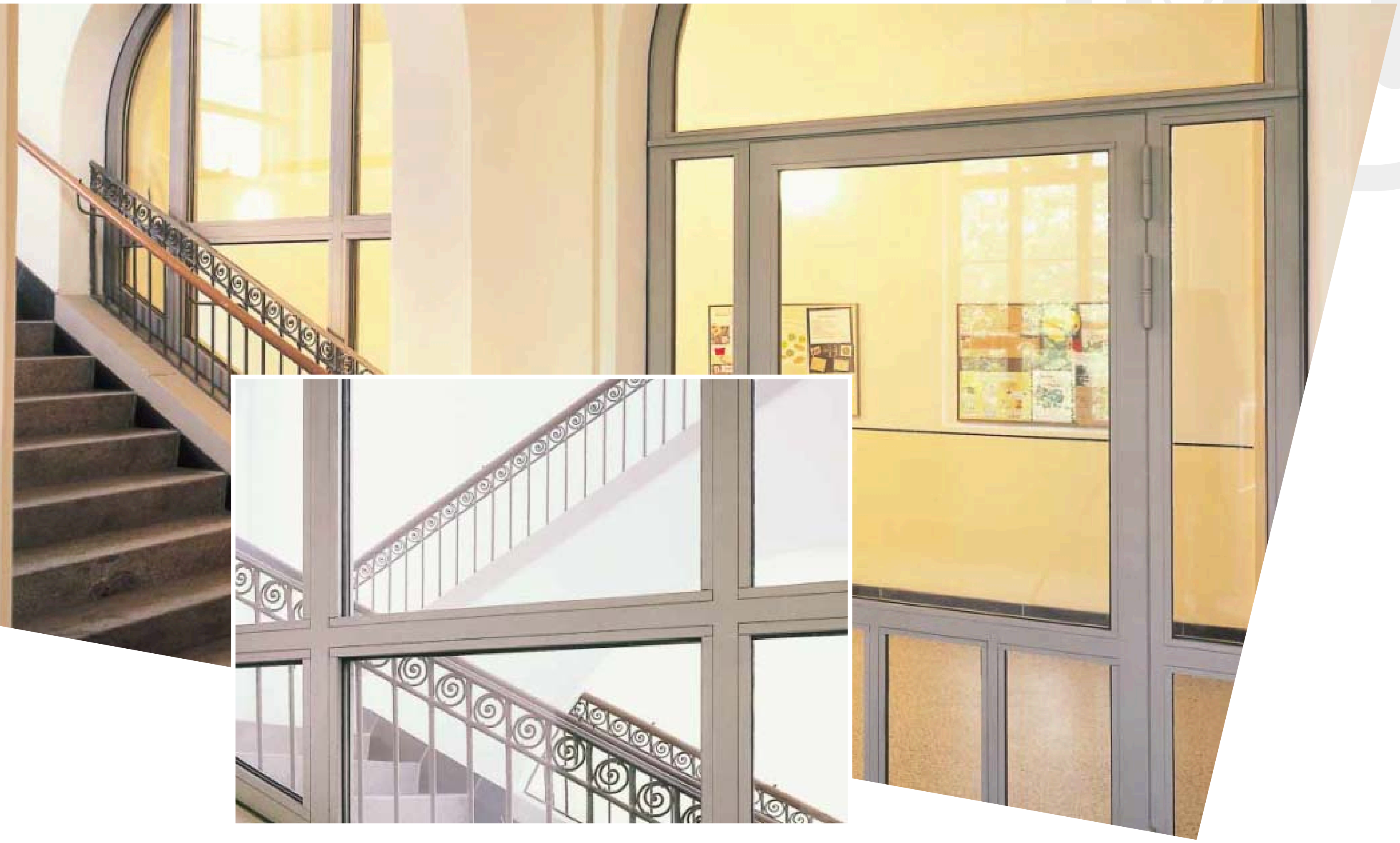

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Snapshots of a profession: Looking around the world at the big picture of architecture

Books

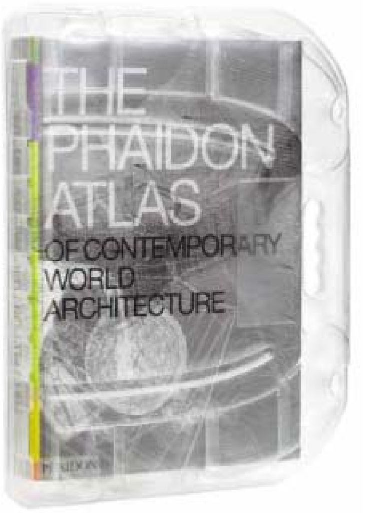
The Phaidon Atlas of Contemporary World Architecture, *edited by Phaidon Press. New York, London: Phaidon, 2004, 824 pages, $160.*

At nearly 18-by-12 inches and weighing 15.5 pounds, *The Phaidon Atlas of Contemporary Architecture* makes *S, M, L, XL* look like a pocket guide. (In case you're wondering, Rem's fat opus tips the scales at a mere 6 pounds, though it does have more pages—1,344.)

Luckily, the *Atlas* has more than just heft working for it. Organized into six geographic regions (Oceania, Asia, Europe, Africa, North America, and South America), the book takes readers on a tour of some 1,100 buildings in 75 countries—all completed since January 1998. So it presents a snapshot of the past five years of architecture from around the globe. A panel of 150 international jurors—including critics, curators, journalists, academics, and practicing architects—selected the buildings, says the publisher.

Most buildings get a full or half page to show off in color photographs, drawings, and a short text. (A few projects, such as Renzo Piano's Jean-Marie Tjibaou Cultural Center in New Caledonia and Foreign Office Architects' Yokohama International Port Terminal get two-page spreads.) Although half a page might not sound like much space in which to present an entire building, these are big pages and their disciplined layouts do a good job of giving the reader a strong sense of what the architecture is all about. If you want an in-depth understanding of a particular building, you'll have to go elsewhere. But for an overview of the current state of architecture around the world, you won't find anything better than this tome.

Comprehensive in its coverage, the *Atlas* includes buildings in places like Urubo, Bolivia; Adis Abeba, Ethiopia; and Butwal, Nepal, as well as all of the usual locales. It finds space for talented young architects such as Qingyun Ma and Yung Ho Chang in China and Shuhei Endo of Japan, but misses a few others, such as Hitoshi Abe and Taka and Yui Tezuka in Japan. It also manages to be more timely than one would expect for such a grand effort, getting very recent projects, such as Frank Gehry's Walt Disney Concert Hall (which opened at the end of October 2003), into the mix.



Maps and charts with neat data on such things as population and urbanization by country give perspective to what is essentially a collection of individual pieces of architecture. And indexes of architects and buildings help the reader navigate an ocean of pages.

Because the *Atlas* presents a panoramic look at the architecture of a particular moment (1998–2003), it will actually become more valuable if accompanied by successive volumes. So I hope its editors aren't planning to catch their breath too long; it's already time to start working on the next installment. *Clifford A. Pearson*

The State of Architecture at the Beginning of the 21st Century, *edited by Bernard Tschumi and Irene Cheng. New York: Monacelli Press, 2003, 136 pages, $30.*

With architects being celebrated by the media as master builders renewing cities worldwide, this would seem to be a golden age for architects. Or is it? That's one question Bernard Tschumi posed at a conference at Columbia University in March 2003. Sixty renowned designers and theorists participated in the event and contributed two-page illustrated essays for this book. Some take stock of the present, others lay out strategies for the future.

By organizing the book into themes that juxtapose concepts usually not thought of together—politics and material, detail and identity, envelope and public/private, electronics and perception—Tschumi encouraged contributors to think creatively rather than regurgitate prepackaged lectures. So Robert A.M. Stern, ever the pragmatist, writes in the chapter "Esthetics & Urbanism" that because urbanism is about human life, "it is not about human form. It is not about art movements … What is a good city? What is the good life that we as architects should advocate? We should answer these questions rather than compete to leave our mark on the city through form." Frank Gehry, on the other hand, writes in the chapter "Form & Influence" that architects should stop worrying about the consequences of their actions and allow themselves the freedom to invent. Winy Maas contends that "few architects want to speak of cities anymore. In a time when the culture of objects is transcendent, what architect wants to be an urbanist?"

A few other high points: Andrew Benjamin traces the way style has become associated with national identity, and asks what a cosmopolitan architecture might look like today. Toshiko Mori documents how an ancient technology—weaving—is being put to radical new uses, while

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Steven Holl suggests that the potential of materials lies in their power to evoke rather than to dictate meaning. Terence Riley challenges the idea that an architect can practice globally, asking, "despite all the rhetoric, aren't such global figures as Rem Koolhaas, Norman Foster, and Frank Gehry defined in terms of nationality?" And then there's Mark Wigley, who suggests that in a world predicated on movement and flows, the power of architecture may be its ability to give pause.

In a mere 136 pages, Tschumi and his coeditor Irene Cheng have put together a provocative, broadly ranging brew of ideas by some of the most prominent designers and architectural theorists of our day.
Andrea Oppenheimer Dean

Refabricating Architecture: How Manufacturing Methodologies are Poised to Transform Building Construction, *by Stephen Kieran and James Timberlake. New York: McGraw-Hill, 2003, 180 pages, $20 (paper).*

Few architects have considered building construction—and the culture of how buildings are constructed—as carefully and insightfully as Stephen Kieran and James Timberlake do in this book. The authors have a successful architectural practice in Philadelphia, where they also teach at the University of Pennsylvania.

Kieran and Timberlake look at how we produce things (mainly cars, airplanes, and consumer products) in our postindustrial society, and see in such production an opportunity to improve the quality and speed of construction and design. Automobile manufacture captivates Kieran and Timberlake because it is one of the best examples of a large industry that has moved to "mass customization," delivering cars to customers who can pick and choose features, versus the "you can have any color, as long as it's black" mass-production approach of Henry Ford. Mass customization seems the perfect fit for architecture and building. In reviewing the auto industry's history, the authors offer reasons why architecture and building have never made the transformation: market fragmentation, conflicting social agendas, monotonous designs, and failures in marketing and delivery.

But, as they explain, large segments of the construction industry—more of them abroad than in the U.S—have adopted some of the qualities of mass customization. Increasingly, material and product manufacturers are packaging their wares as "chunks" (the authors' term for integrated units of construction, made up of smaller pieces, that make fit, finish, and installation easier). Zero-clearance fireplaces, which come pretty much preassembled, would be an example. The housing industry has been moving in this direction. During the past few years, manufactured homes—known less-flatteringly as trailers—and modular homes have improved construction quality and lowered costs to become better products than run-of-the-mill, site-built tract houses.

The authors are impatient with these breakthroughs, because the bulk of factory-produced homes, they believe, are aesthetic disasters. But these houses are products of sophisticated market research and product design. Maybe the problem is that people who buy these homes have bad taste. Dealing with that problem will require another book.
Michael J. Crosbie

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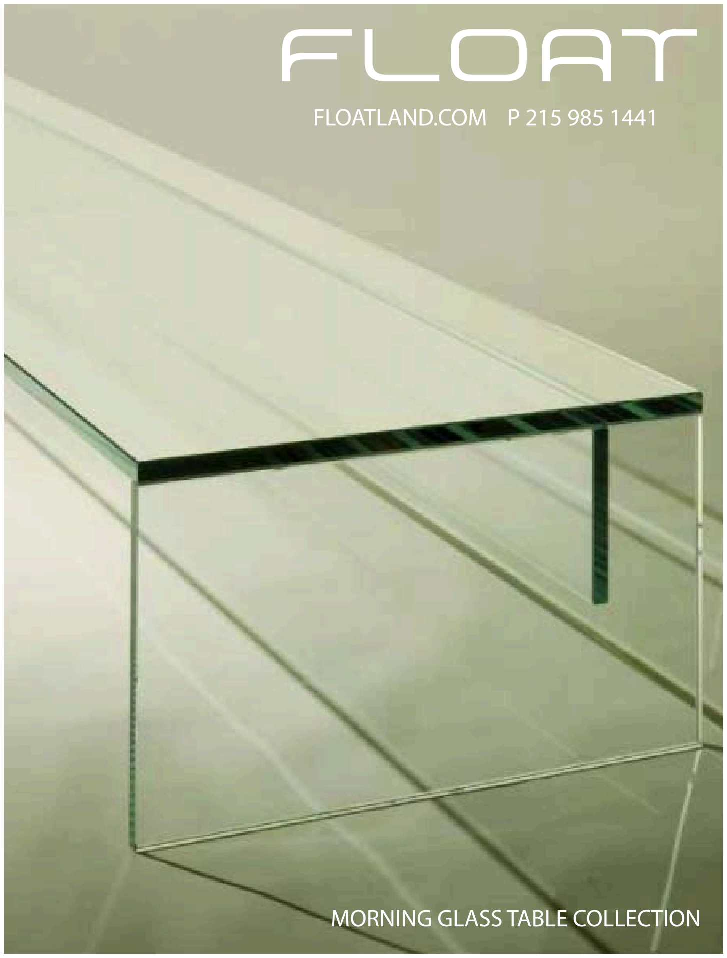

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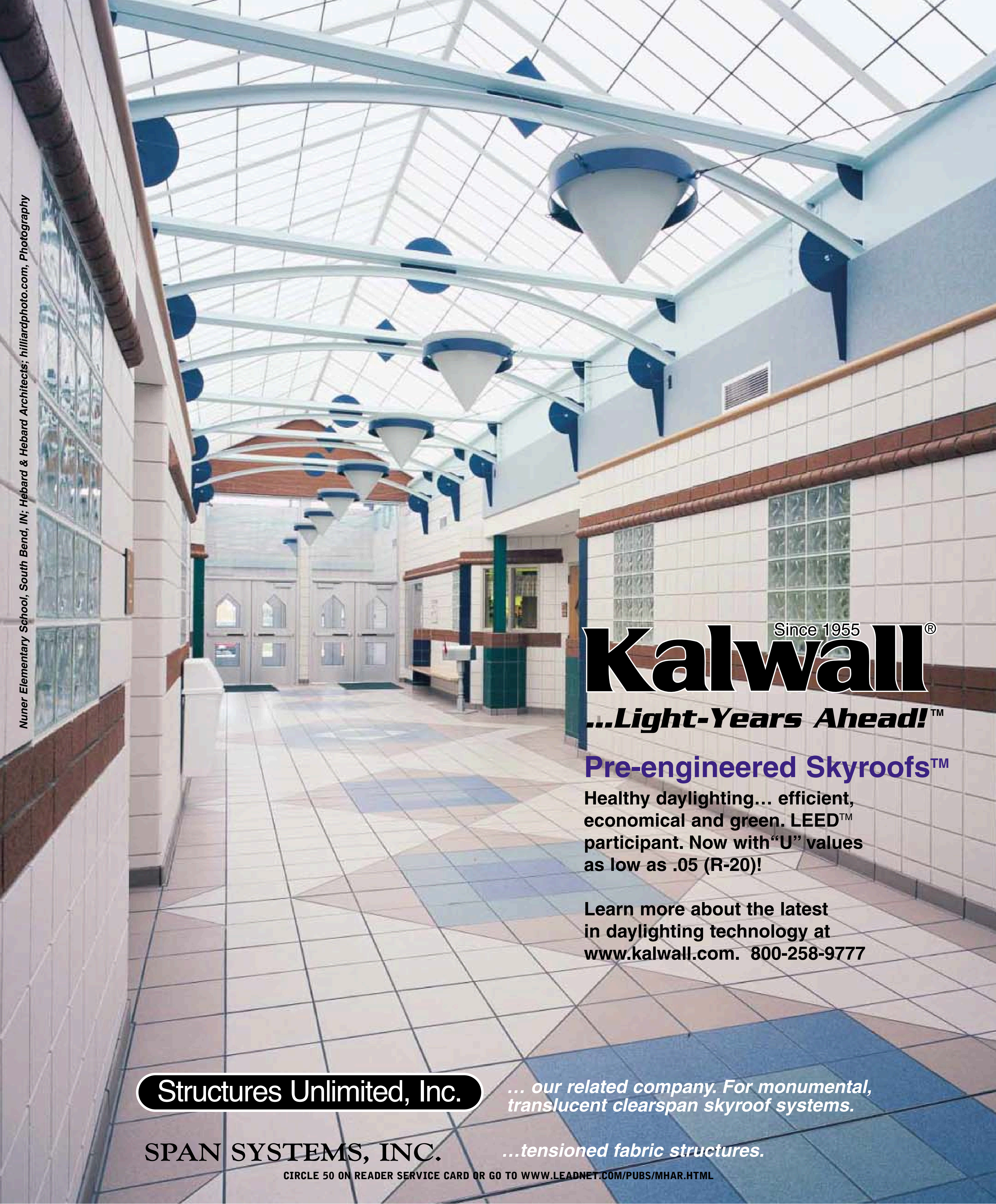

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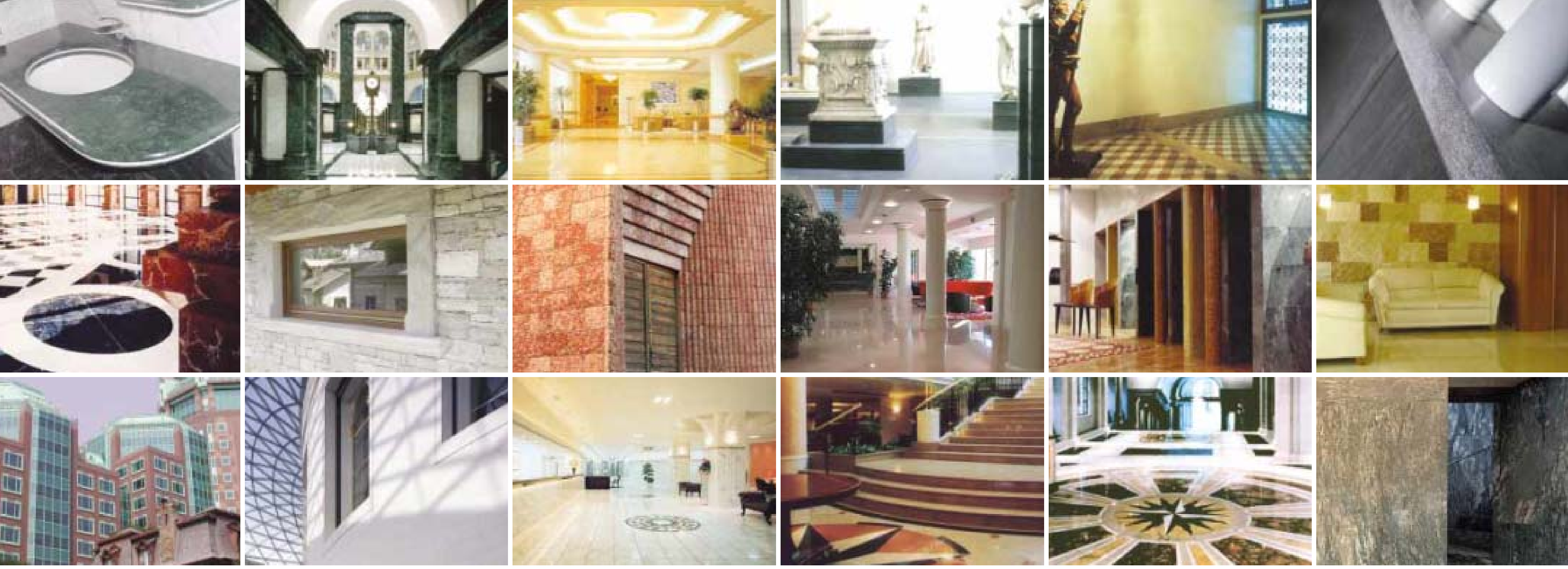

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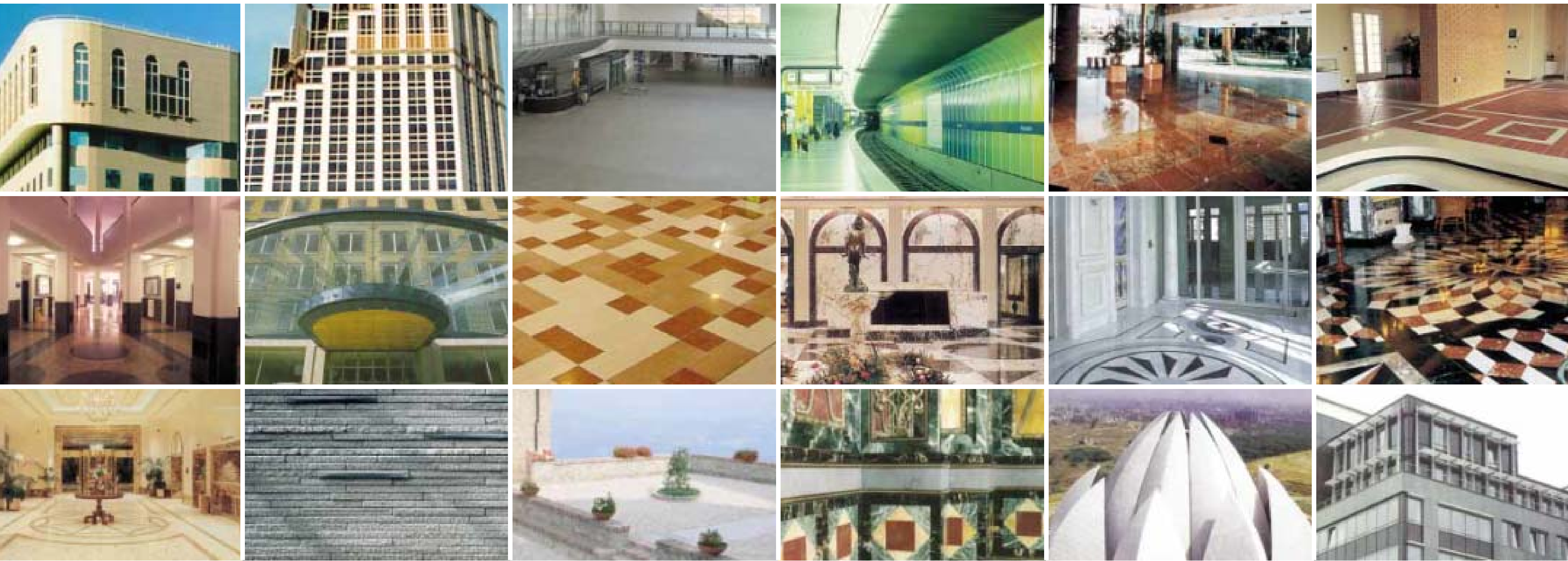

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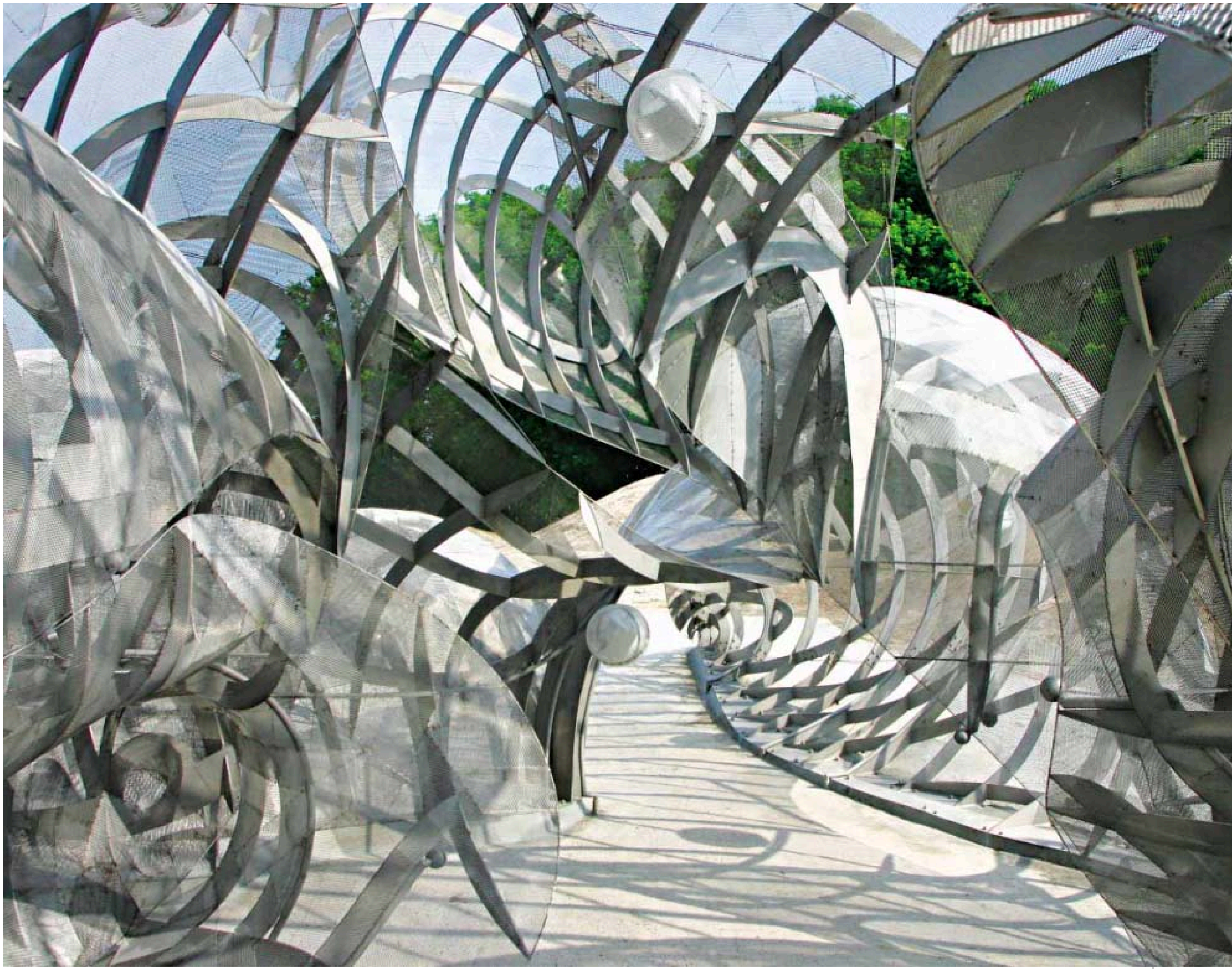


By Robert Such

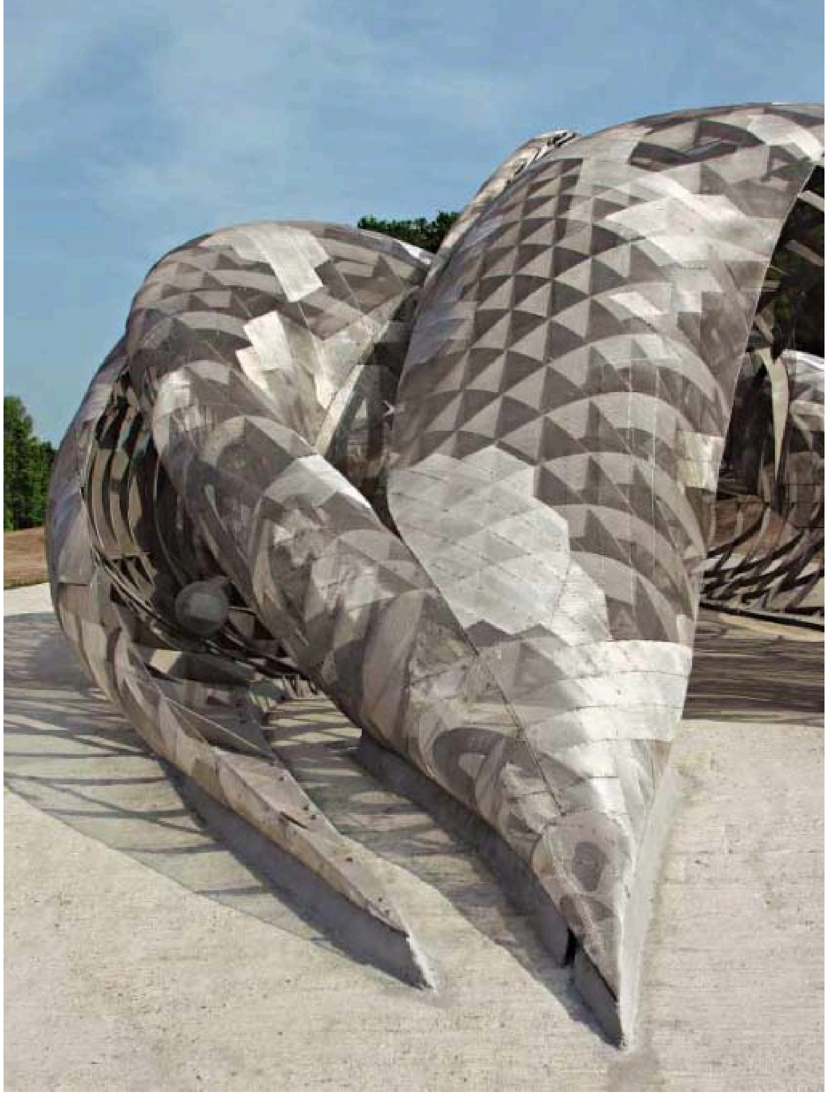
Altering form and sound with movement

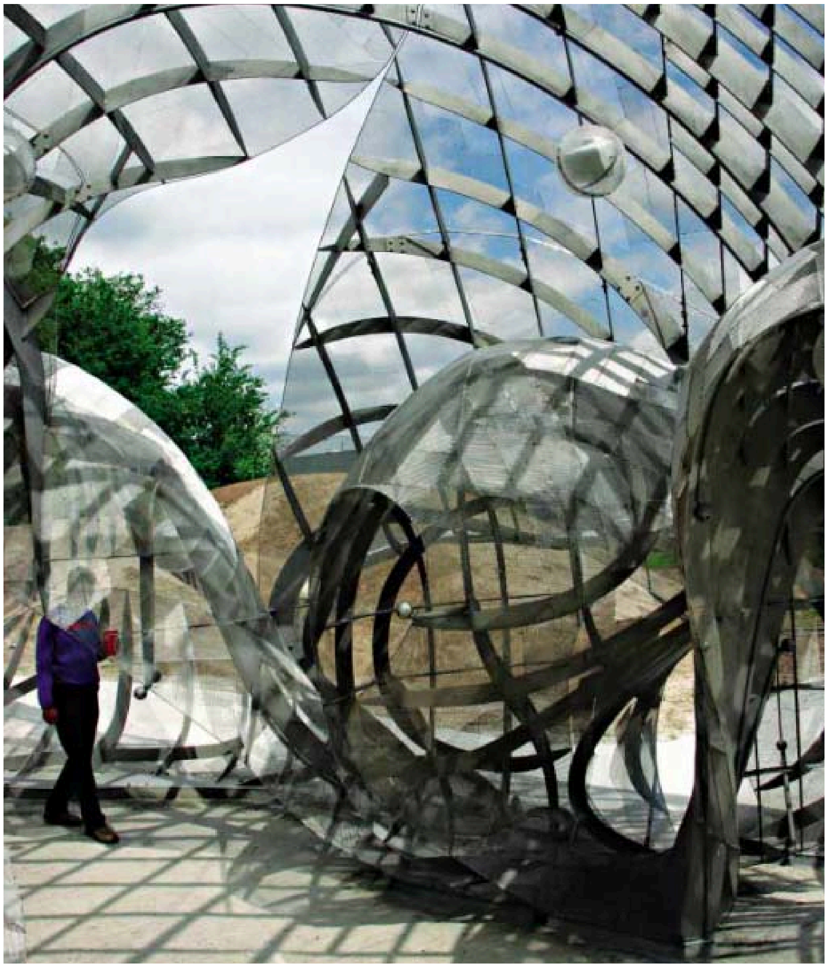
Despite its name, Son-O-House is not a house but a permanent public artwork that is both a pavilion and sound installation. Located on the outskirts of Son en Breugel in the Netherlands, it represents the second joint venture by NOX Architects and Dutch composer and media artist Edwin van der Heide. NOX, headed by Lars Spuybroek, first collaborated with Van der Heide on the FreshH2O eXPO pavilion on the island of Neeltje Jans, the Netherlands, in 1996–97 [RECORD, May 1999, page 204].

"I wanted sound that makes people move," says Van der Heide, who also wanted to move sounds from one part of the building to another, and then record the subsequent movement of people. Physical human movement was also the starting point for the pavilion's architecture, whose curves are derived from the

PHOTOGRAPHY: © NOX

An organic-looking creature made of stainless-steel ribs and expanded steel mesh (right) also emits sounds relating to people's movements within it (below).





human body in motion. Spuybroek and his office analyzed the movements of the limbs, joints, and extremities of people as they walked around a house, and formed a conceptual model, where paper strips codified the complex array of bodily movements. Three types of cuts were developed.

As Spuybroek explains, "When a hip movement," for example, "was accompanied by a joint movement, like the flexing of an elbow or knee, the strip of paper was cut down the middle. We then mapped additional foot or hand movements by another cut." When connected, the flimsy paper strips could support each other. The paper model was digitized and the final arabesque structure made from plasma-cut stainless-steel ribs and expanded steel mesh. The various orientations and the mosaic of stainless-steel panels result in a camouflaged appearance and produce a visual experience that changes with lighting conditions and the visitor's viewpoint.

Visitors to the 3,229-square-foot, interactive Son-O-House must not only stoop to enter some areas of the building, they must also watch out for the uneven concrete floor. As they walk through the space, 24 infrared sensors pick up and record their movements; this statistical information is stored in a database. In the process, 20 speakers distribute shifting acoustic frequencies to create a slowly evolving soundscape.

People in turn respond to these sounds, some of which are dissonant and repellent, by either moving away from or advancing toward them.

Slight phase differences between sound waves from nearby speakers can produce quieter and louder spots again, in response to the visitors' movements. Because of the system that Van der Heide has developed, over time effective sounds are retained and sounds that don't cause movement are eliminated. As a result, people leave behind an acoustic trace of their presence in the building, and returning visitors will share a different acoustic environment.

With this unusual structure, architecture and sound join together to offer visitors different aural and kinesthetic experiences. In their second collaboration, Spuybroek and Van der Heide have dramatically explored the relationship between time, place, and the perception of sound and architecture. ■

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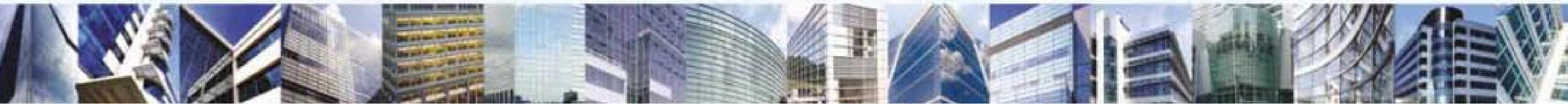

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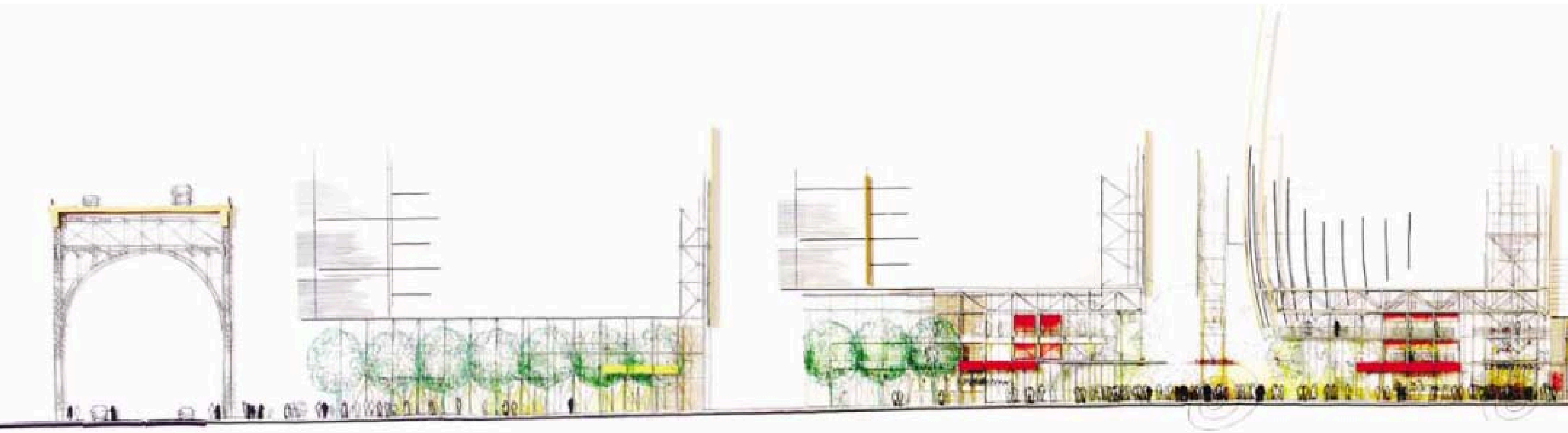
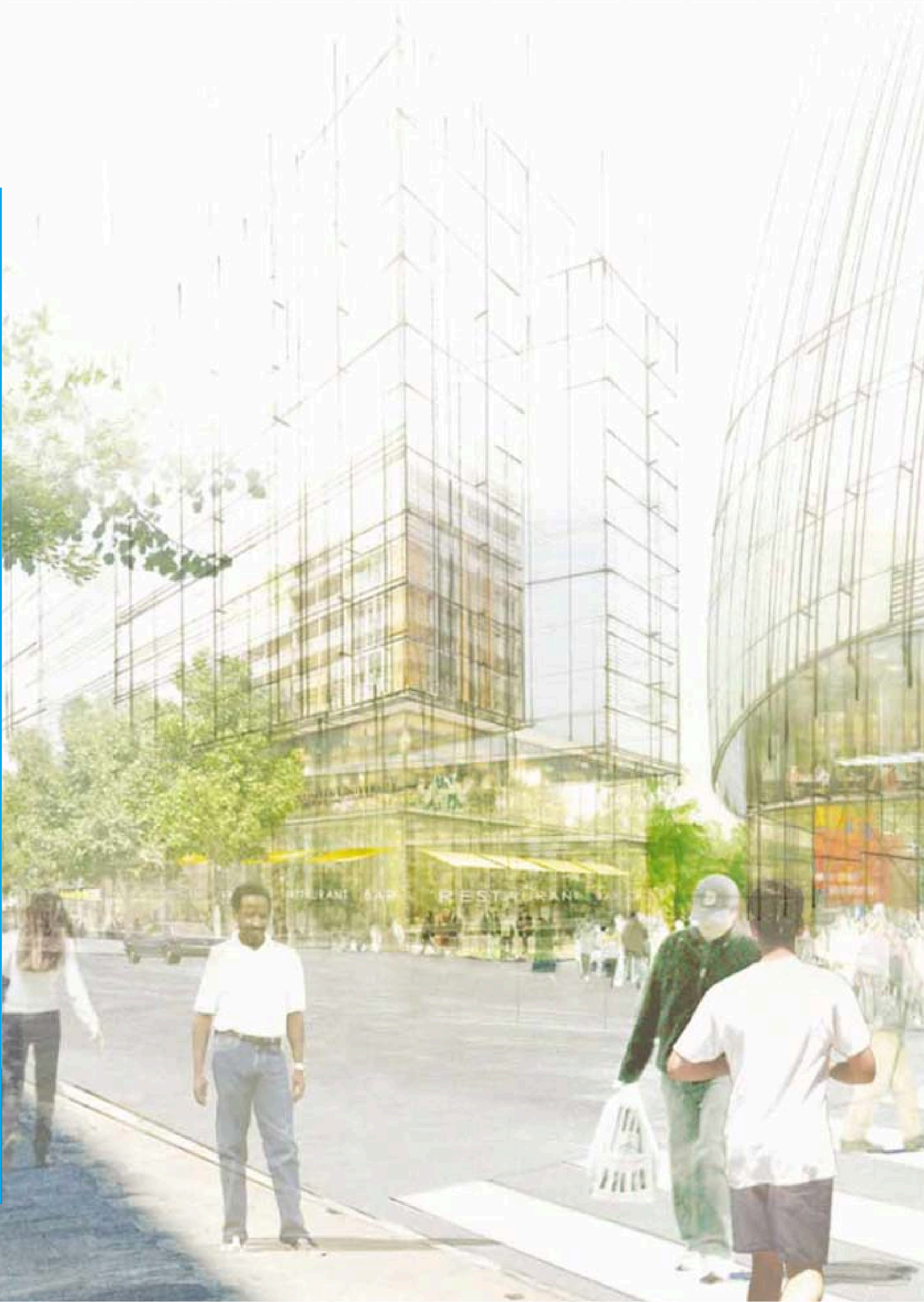
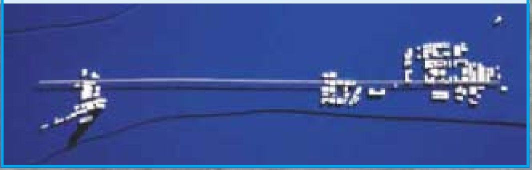




Columbia launches expansion

Columbia University has unveiled a 30-year master plan to dramatically expand its campus far north of its current borders. The build out, which would be the most expansive in the school's history, covers 20 acres in Manhattan between 125th street and 133rd street on the north and Broadway to 12th Avenue east to west. The design, overseen by Renzo Piano Building Workshop and Skidmore, Owings & Merrill (renderings, this spread), focuses on openness and community interaction, and is filled with glass structures and ground floors programmed with community-related venues such as stores, banks, and performance and meeting spaces. School facilities on upper floors will include laboratories, classrooms, and performance spaces.

The project will provide the university, whose space per student (326 square feet) is far below most comparable schools, with much-needed facilities, and is expected to generate about 9,000 new jobs and $4 billion in economic stimulus to the city, the university claims. School officials have been meeting with neighborhood residents since 1998, but some neighbors remain wary of an encroaching university presence. Marilyn Jordan Taylor, who leads the SOM team, is cognizant of such fears and says the team is doing all it can to address them: "One important theme of the project is the mutual responsibility of the school to the city and the city to the school." *Sam Lubell*



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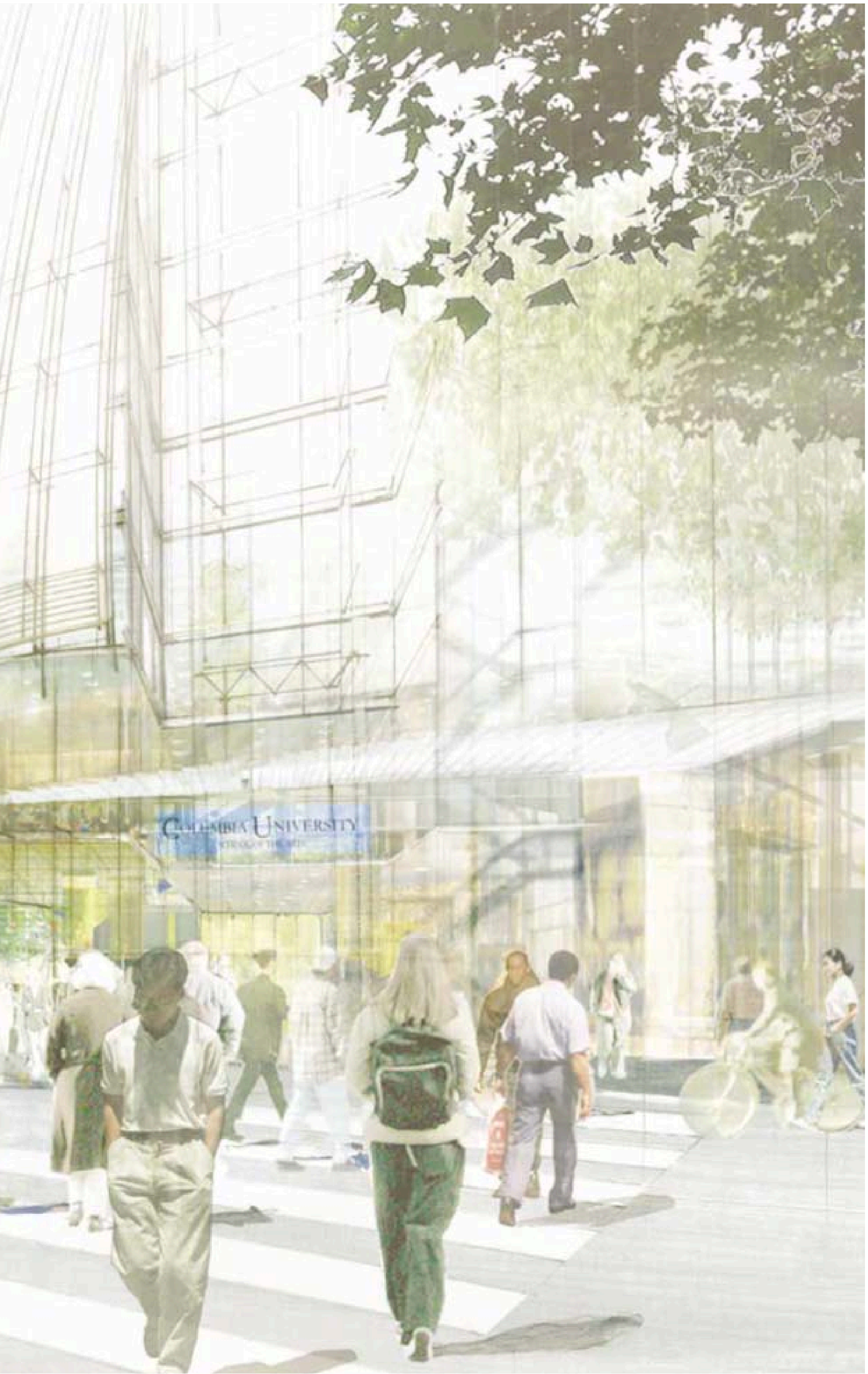
Campus planning is breaking new ground

By Nancy Levinson



Colleges and universities are among the most coveted architectural clients: Educational institutions maintain their existing buildings with a curator's zeal and commission new projects with a collector's zest. These days, many are constructing at a prodigious pace and impressive scale. A tour of schools—elite private universities, select women's colleges, sprawling state schools, institutes for technology and the arts—would show campuses crowded with construction cranes and planning offices bustling with new proposals. The University of California at Los Angeles (UCLA), for instance, has $2 billion worth of construction in the works or just completed, according to campus architect Jeffrey Averill. He says the upheaval has led some to joke that UCLA stands for "Under Construction in Los Angeles."

UCLA is an extreme case, but it's a rare campus that is not a perpetual work in progress, a mix of construction and demolition, renovation and reprogramming. Interviews with university presidents, campus architects, architecture school deans, and practitioners reveal common concerns, and suggest that campus building is motivated by several interrelated factors, including the communications revolution, the rise of interdisciplinarity, rapid advances in the sciences, the evolving expectations of students in a consumer culture, sensitivity to town-gown relationships, and the 1990s economic boom, which encouraged a new generation of philanthropists.

Student needs, community concerns, and long-term goals drive a building boom.

The most fundamental trend in campus planning is the increased emphasis on the planning process itself. This isn't as tautological as it might sound: Campus design is always a balance between short-term imperatives and long-range goals. As Charles Newman, campus architect of the University of Pennsylvania, notes, "Campuses often grow in reactive, opportunistic ways. Certainly that was the case at Penn for many years." Curt Heuring, campus architect of the University of Chicago, says he sees his job as promoting the large vision over

Contributing editor Nancy Levinson is a writer and architect based in Cambridge, Mass.

the incremental move, arguing that "short-term decisions, no matter how quickly they solve an immediate problem, are almost always bad decisions."

Today, the sheer scope of expansion, adaptive renovation, and new construction has intensified the need to make sure that all projects are carefully sited, "part of a comprehensive vision that integrates the physical campus with the identity of the institution," says University of Cincinnati president Nancy L. Zimpher. "Planning is key," agrees Frances Daly Fergusson, president of Vassar. "Without it, an institution will make mistakes, and even the most beautifully situated campus can be ruined by poorly located buildings and bad open space."

Plans go beyond buildings to focus on landscapes

Zimpher's and Fergusson's views are widely shared by their counterparts across the country. Many schools have drafted multiyear development plans—or frameworks, to use a term now in vogue—that go beyond high-profile building to address subtler landscape and environmental elements that can make extensive, sometimes discontinuous places cohere into harmonious academic communities. "Much of it is about creating connections such as paths and walkways, and about using landscape to create good common spaces," says Newman, describing the plan guiding Penn's construction agenda.

Some schools, such as Wellesley College, have drafted landscape master plans, an acknowledgment, as Wellesley president Diana Chapman Walsh explains, "that the environmental setting as a whole is more significant than any individual building." An influential proponent of planning is David J. Neuman, campus architect of the University of Virginia (UVA) and editor of the anthology *College and University Facilities*. Neuman argues that a "strong planning armature" is the key to a successful campus. "Neither memorable architecture nor distinctive landscapes by themselves can make a good campus," he says. "It's the interplay between the two, the order of the whole."

Neuman, who arrived at UVA last year after 15 years as campus architect at Stanford, where he focused on reestablishing the principles of that school's Frederick Law Olmsted plan, has already begun to reshape planning at Virginia. To integrate the many projects on the boards at Thomas Jefferson's "academical village," he has instituted a series of charrettes that bring together architects and landscape architects. "It is my mantra that every single project has got to be thought of as campus building—with building understood as both noun and verb—and to contribute to the whole."

An essential challenge of comprehensive planning, of course, is determining what facilities are needed. One pronounced trend is to focus on recreational, social, and residential places that enhance that elusive quality often called "campus life." Such facilities help schools compete for students, who are apt to evaluate amenities as well as academics. One result is a proliferation of fitness centers that look more like posh health clubs and typically feature airy, glass-walled spaces with weight machines and yoga studios. At Penn, for example, the Pottruck Health and Fitness Center designed by Richard Dattner & Partners has a "wellness" program that supplements the athletics agenda. The Massachusetts Institute of Technology (MIT) recently opened Zesiger Sports and Fitness Center, a glass-walled pavilion by Kevin Roche John

New health-care and arts buildings top changes at UCLA

This year marks the peak of an ambitious capital improvement program on the University of California, Los Angeles, campus. Since 1986, UCLA has undergone nearly $2 billion worth of work in design and construction. While a significant amount of funding has come from FEMA for seismic retrofit work and infrastructure improvement projects, the program has supported a number of new and architecturally noteworthy buildings and additions.

The largest project is the $675 million Westwood Replacement Hospital designed by Pei Partnership Architects, which will replace the current earthquake-damaged medical center. Slated for completion in 2005, it will open as the Ronald Reagan UCLA Medical Center. Nearby, two new health-science buildings, one designed by Perkins & Will, the other by Cesar Pelli & Associates, are under construction. Both will provide advanced lab facilities for health-science and research programs.

Across campus, Richard Meier & Partners is completing work on the Edythe L. and Eli Broad Center (model, left), a seismic renovation and expansion for the School of Arts and Architecture. Glorya Kaufman Hall (model, top, and rendering, center) has undergone a renovation and additions led by Moore Ruble Yudell to support dance, cultural studies, and performance spaces. During construction, displaced departments have settled into a two-year-old "staging" building by Steven Ehrlich Architects, at the opposite end of campus.

Construction will remain an inconvenience for several more years. "Staging of academic and research programs during construction is always a major concern on an active, vibrant campus," says campus architect Jeffrey Averill. "It has been a constant challenge and will continue to be, but the resulting transformation will be well worth the temporary dislocation." *Allison Milionis*

The University of Michigan will expand and renovate its Museum of Art (left and below). Allied Works Architecture has designed the $35 million project, which includes a 57,000-square-foot addition.

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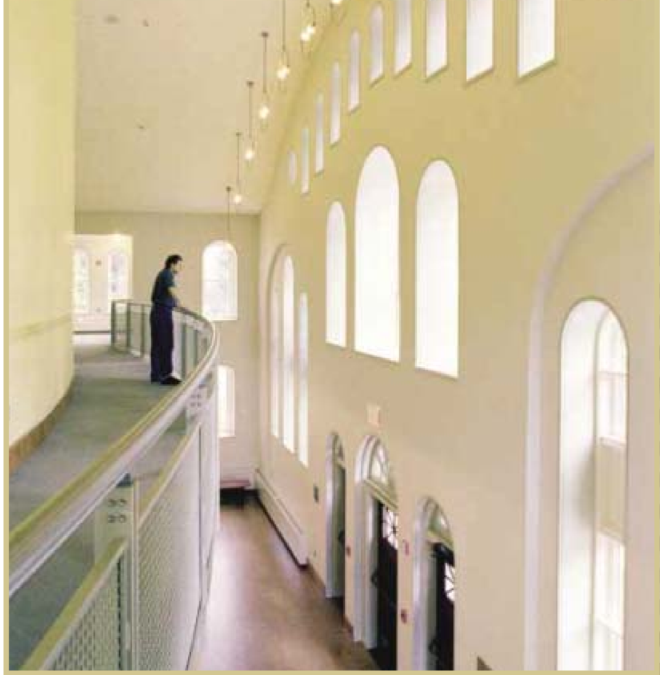
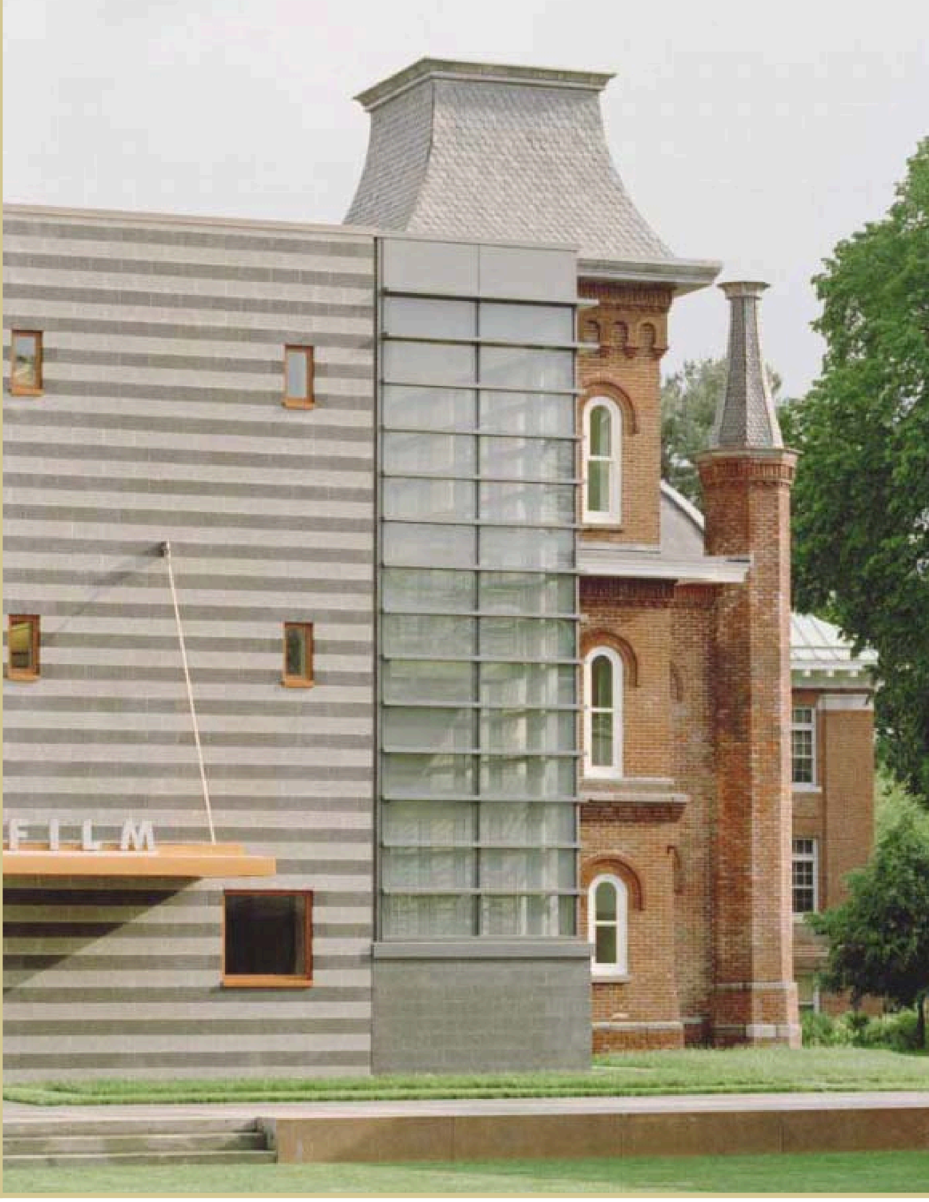
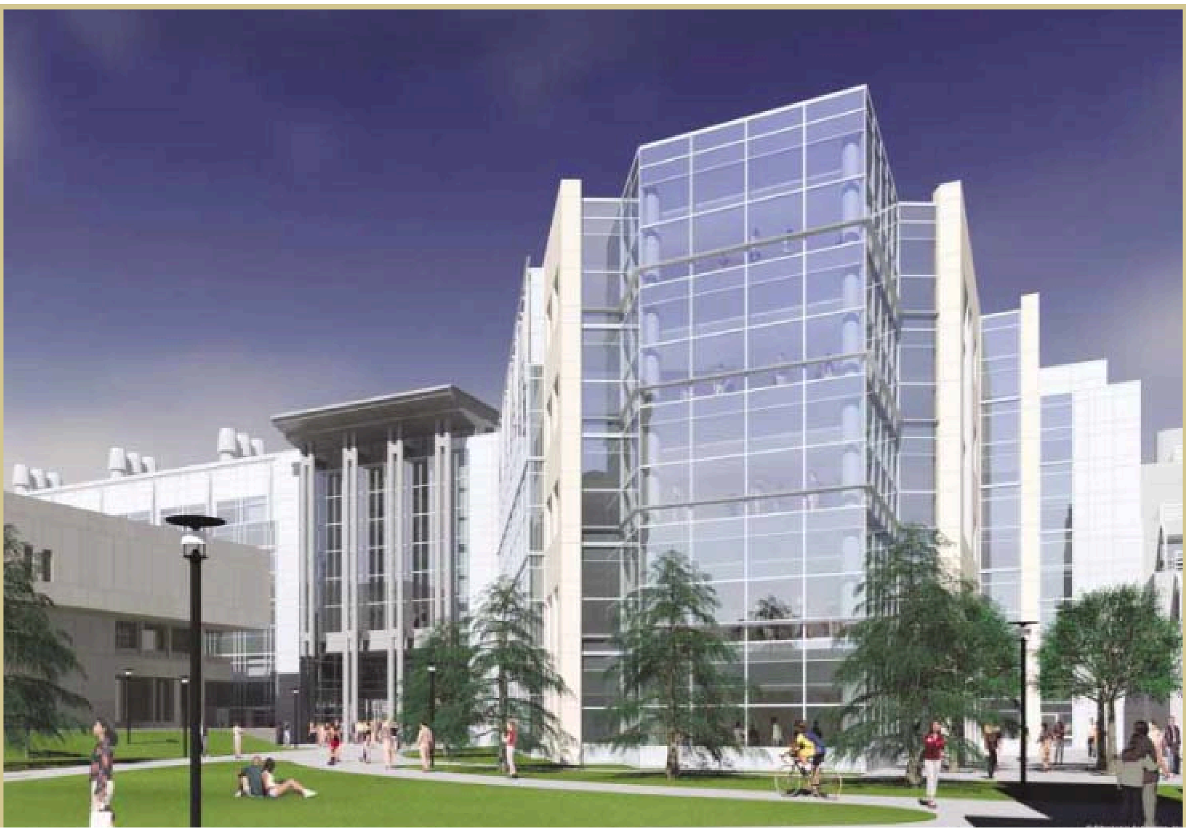


Vassar College has occupied a new Center for Drama and Film (above and right). The $25 million complex, designed by Cesar Pelli & Associates, doubled space to 54,000 square feet while retaining and restoring the 1866 brick facade of Avery Hall. A 320-seat theater, rehearsal spaces, and classrooms are among the facilities.





In summer 2005, the University of Chicago will open the $180 million Interdivisional Research Building by Ellenzweig Associates (left and below). The 456,000-square-foot building will house research labs and a new Institute of Biophysical Dynamics.

The University of Cincinnati's University Pavilion (above and left), by Leers Weinzapfel Associates, is a "one-stop" gathering place housing a visitor's center, executive offices, and student services such as admissions.

Dinkeloo and Associates that has become a popular spot.

Complementing better fitness facilities is the new type of campus center, a flexibly programmed space that might include cafés and juice bars, broadband and wireless zones, informal lounges, game rooms, convenience stores, and perhaps even performance areas. Such centers are responding to changing lifestyles, targeting students who grew up hanging out at malls and studying at bookstore cafés. It's a generation, says architect Denise Scott Brown, "that doesn't so much eat as graze." Venturi, Scott Brown & Associates has designed campus centers at Penn, Princeton, and Harvard, all geared to give students casual, lively places to hang out. "Above all, a student center has got to make it more fun to be on campus," she says.

A notable new campus center that certainly takes the idea of fun seriously is the McCormick Tribune Campus Center at the Illinois Institute of Technology (IIT), by the Office for Metropolitan Architecture [RECORD, May 2004, page 123]. With 110,000 square feet of amenities, including a coffee bar, bookstore, auditorium, and game room, the center has already improved the school's sense of community, says IIT architecture dean Donna Robertson. "Students today are very sophisticated consumers, and they demand a lot from their environment," she says. "And it turns out it really does help to be able to get a good cappuccino on campus."

Dorm rooms are replaced by suites loaded with extras

Another trend is increased attention to the residential experience—and the preferred term is *residence*, not *dormitory*. Not even the most competitive schools can ignore the heightened expectations of an affluent generation accustomed to a high degree of personal comfort. Stanford president John L. Hennessey notes, "Students today aren't content with old-style dormitories, with double-loaded corridors lined with tiny rooms, and a bathroom down the hall. They expect more in the way of privacy and personal space."

The current favored model is the apartment-style suite, where half a dozen or so single rooms share a common living room and bathroom. And no matter the configuration of rooms, many schools are focused on expanding residential capacity and quality, again to enhance campus life and recruit students. Simmons Hall at MIT, designed by Steven Holl Architects [RECORD, May 2003, page 204], was a response to a study that observed that while the school excelled in academics and research, it had neglected the extracurricular matter of community. MIT president Charles Vest says Simmons and Zesiger are both part of the institute's efforts to bolster on-campus life. "We came to realize that campus living had become somewhat separate from classroom learning, and that we needed to become a more residential campus, and a more communal one, and that in doing so we could help smooth some of the hard edges of a very rigorous education."

Changes in patterns of learning are also shaping new buildings. Here the key development is the rise of interdisciplinarity, especially in the sciences, and many schools are constructing up-to-the-minute multidisciplinary research laboratories. Don M. Randel, president of the University of Chicago, points out that buildings are crucial in the recruitment of top faculty and students. "Changes in the nature of scientific investigation are driving a lot of development,"

The University of Cincinnati cultivates star architects

The University of Cincinnati campus started out bucolic enough in 1895, when the then-municipal university moved to city-owned parkland in a streetcar suburb a few miles from downtown. Classical, redbrick buildings lined drives and formed quadrangles until the campus covered 137 acres. But as it grew in the 1960s and '70s, bland Modern boxes arose amid seas of parking lots, and strip-style restaurants eroded the edges. An Art Deco library was replaced by a concrete bunker atop a parking structure, designed by the president of the alumni association.

In 1984, John Meunier, head of the School of Architecture, invited Peter Eisenman to program an addition to the College of Design, Art, Architecture, and Planning (below left). When he finished, local architects organized to bar outsiders. But Meunier and the dean, Jay Chatterjee, persisted. Eisenman built the addition, upping the ante for architecture. When Meunier left UC, Chatterjee shepherded the Signature Architecture program, gradually gaining the support of university president Joseph Steger and the trustees. UC alumnus Michael Graves was invited to design the Engineering Research Center, and soon there were buildings by David Childs, Cambridge Seven, Henry Cobb, and Frank Gehry (below right). Then came student facilities by Charles Gwathmey and Gregory Karn, Buzz Yudell, and Mario Violich. Soon there will be Morphosis's Student Recreation Center and Bernard Tschumi's field house. And landscaping interventions by George Hargreaves and Mary Margaret Jones have created a pleasant place for people. *Jayne Merkel*

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Randel says. "You can't do 21st-century science in 20th-century buildings, let alone in 19th-century ones." Thus, the largest project under construction at Chicago—which has built nine new buildings in the past five years—is a 456,000-square-foot research building designed by Ellenzweig Associates.

The merging of disciplines is increasingly relevant across curricula. "Interdisciplinarity is becoming so important," says Wayne Clough, president of the Georgia Institute of Technology, "that we now conceive of our campus in terms of 'neighborhoods,' of disciplines that need to be near each other. And this is not just for the sciences, but the humanities, too."

Town-gown concerns spark new synergies

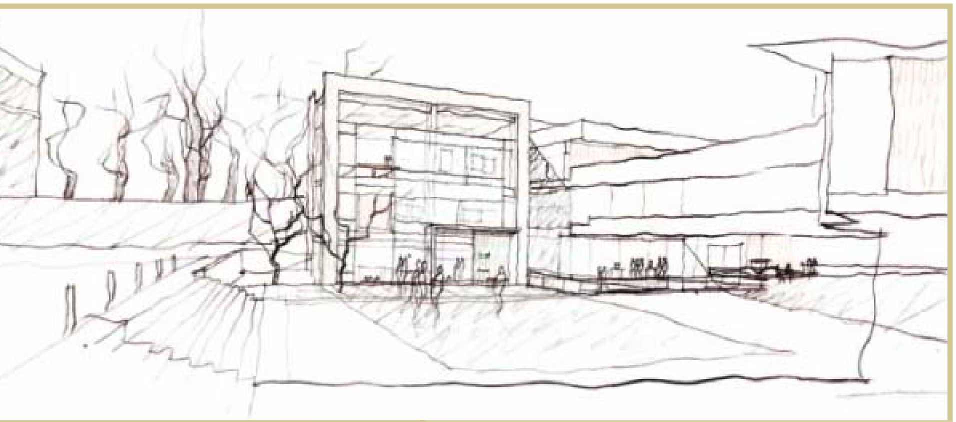
Campuses are clearly changing, and so are the relationships between schools and their metropolitan environs. For years, many urban universities turned inward, making the campus a leafy, cloistered enclave separate from surrounding neighborhoods perceived as unsafe or at least unfriendly. But the model is now shifting emphatically: Schools are no longer gated citadels, but instead catalysts for developments and city building. Many universities have become vital economic engines, sometimes the largest single employer in town. This is the case with Yale and New Haven, Connecticut. "The health of Yale and the health of New Haven are intertwined," says Yale president Richard Levin, who has made improved "town-gown" relationships a priority. "We've been working to make New Haven an asset, not a liability." To that end, the university has become a principal agent of the city's redevelopment, helping to create a special tax district that has attracted many shops and restaurants to the city's downtown, as well as softening the edges of the campus through green space and ground-level retail.

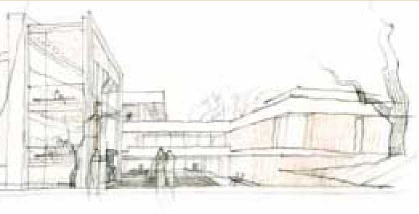
At Georgia Tech, similarly synergistic goals have inspired Technology Square, a multiuse redevelopment of several blocks adjacent to the campus that comprises the School of Management, a research center, an economic development institute, a hotel and conference center, a Barnes & Noble, and restaurants. "We realized that we needed to engage our neighbors in Atlanta," says Clough. "The cloistering strategy wasn't working; it hurt both the school and the city."

Penn, too, has worked systematically to reinvigorate its urban environs. In 1997, it started the West Philadelphia Initiatives, a program intended to encourage public and private reinvestment in the declining neighborhoods around the university; to date, the results include a public school, market-rate housing, a grocery store, a movie theater, a book store, and assorted small shops and restaurants.

Columbia University has been looking hard at its relationship with Manhattan. The school recently announced plans to develop a new campus district north of its Morningside Heights campus. According to Columbia president Lee Bollinger, the new campus will be planned in collaboration with the community and the city, and reflects a different paradigm than that of McKim, Mead and White's Beaux Arts plan. "Morningside is a great academic space," says Bollinger, "but it would be inconceivable to try to replicate it—to make a place of stone and brick, of gates and walls. The new campus must reflect today's closer relationship of the university with the city." Renzo Piano, part of the team studying the site, says, "A century ago, the Columbia campus told a story

An 1877 carriage house was adapted by Belmont Freeman Architects as a new Lesbian Gay Bisexual Transgender Center at the University of Pennsylvania (left and above). The facade was restored, with original carriage doors opening to a stone courtyard.





The architecture school at the University of Virginia will expand with an east addition to Campbell Hall designed by faculty member W.G. Clark (above and left). Ruffin Hall (below), designed by Schwartz/Silver Architects, will expand facilities for the studio arts program.

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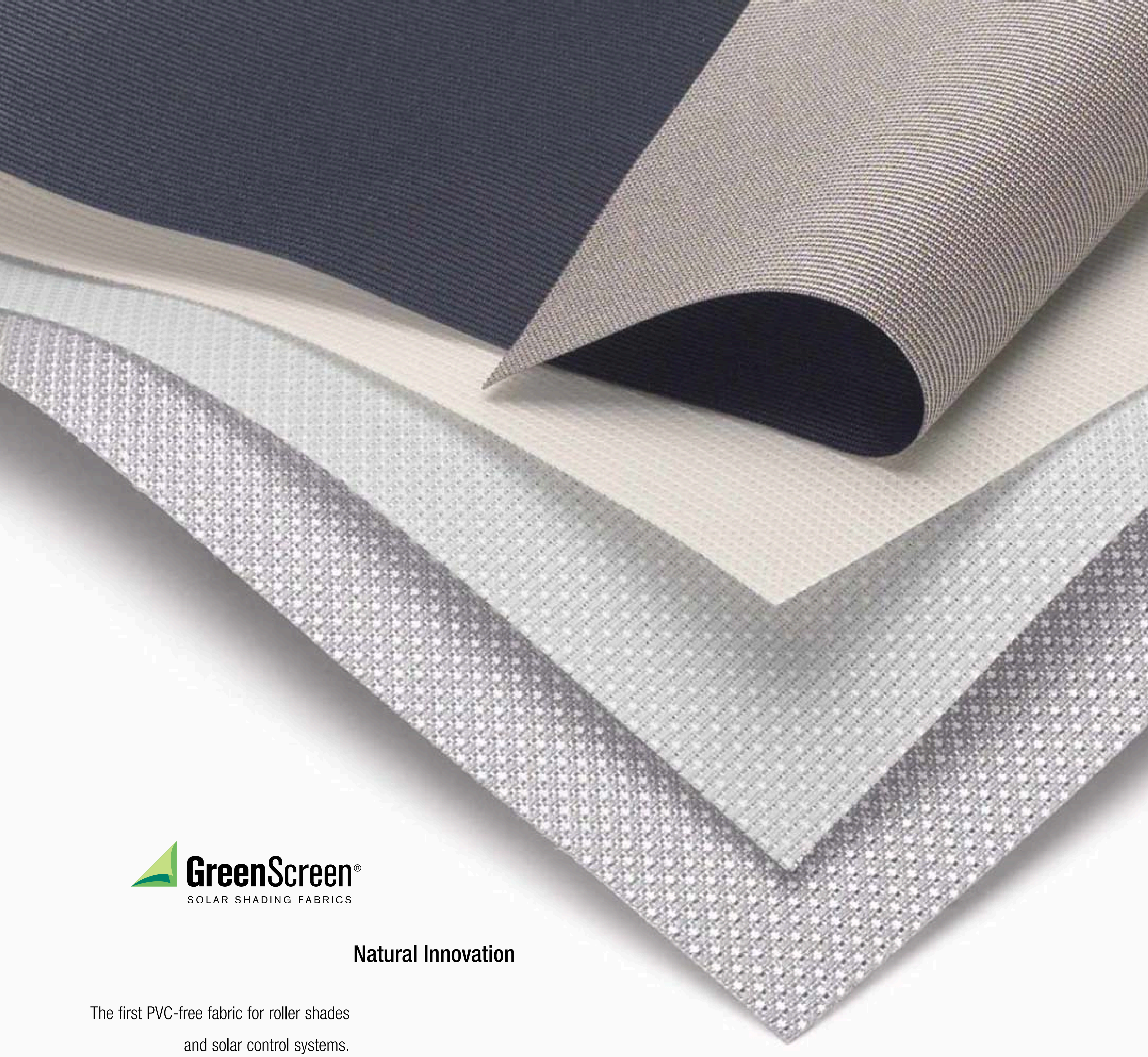

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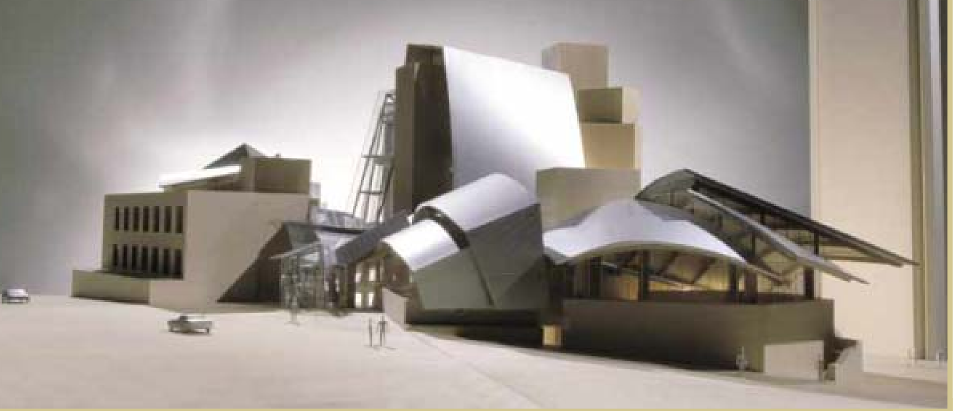
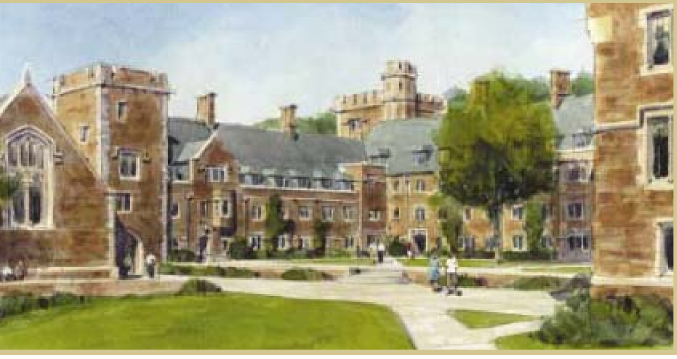




At Princeton, a debate over architectural styles persists. Frank Gehry's bold forms for a new science library (above) stand in sharp contrast to a Gothic Revival residence designed by Demetri Porphyrios (left).

about monumentality, about lofty dignity. Today the school has a different story to tell, about participation in the city, about an architectural language of transparency and permeability."

Architectural styles are still debated on campus

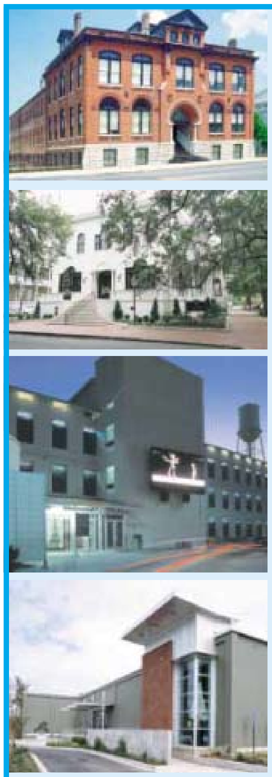
Architecture does tell a story, and the nature of its expression is a perennial theme on campus. The discussion presents an intriguing contradiction: Universities are dedicated to the advancement of knowledge, and yet they often build conservatively, embracing revivalist styles. The very term "Collegiate Gothic" evokes the quintessential image of the American campus: an archaic-looking stone structure set in a serene place. The tension between tradition and innovation persists, sometimes on the same campus. Princeton, for example, is building both a Gothic Revival residential college designed by Demetri Porphyrios and a new science library by Frank Gehry.

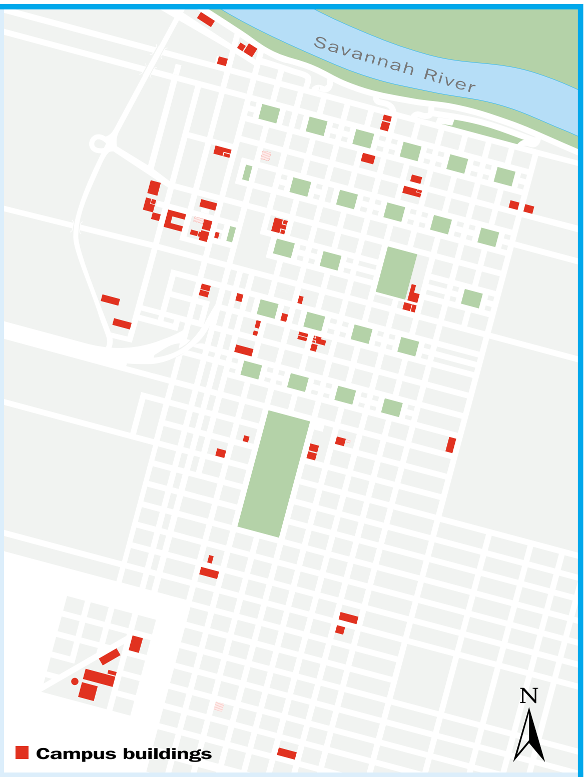
At some schools the debate between past and present is inevitable. Thomas Jefferson's extraordinary campus for the University of Virginia can be intimidating to those who would build upon it, but it can also inspire. UVA dean of architecture Karen Van Lengen says, "To focus on precise stylistic replication is rarely successful. The usual results are what might be called 'Jefferson wallpaper.' What should be carried forward are the principles of the campus design." She cites planned additions to the architecture school, by faculty members W.G. Clark and William Sherman, as projects that respect principles while working in a contemporary idiom.

Some schools are freer to use contemporary architecture to signal their institutional ambitions. In the past decade, the University of Cincinnati has transformed itself from a commuter college with a surface parking lot smack in the middle of campus to a major research university, and signature architecture has been central to its renaissance. "When I got here in the early '80s, the place was shabby," says president emeritus Joseph Steger. "There was no 'wow!' to the campus." Under Steger's leadership, the school became a patron of contemporary design, commissioning a landscape plan by Hargreaves Associates and buildings by, among others, Michael Graves, Frank Gehry, and Peter Eisenman, whose Aronoff Center attracted widespread attention, even notoriety, which was exactly the point. "We wanted to wake up this town to the value of architecture," Steger says.

"Contemporary architecture can be a hard sell, but I'd rather commission a building that provokes argument than one that nobody notices," says Chicago's Randel. "Universities are now the major patrons of architecture, and this suggests a responsibility to seek leading-edge architecture."

As institutions that endure and build for the long term, colleges and universities are well suited to the role of architectural patron. The past decade has seen extraordinary activity in campus development, and the coming years will likely see more with emerging trends gaining strength. Green design is attracting increasing attention, for reasons both ethical and economic. And, as UVA's Neuman suggests, the preservation of Modernist structures will become an unavoidable issue on many campuses. "All those postwar buildings constructed during the last big campus extension are going to need extensive renovation," he says. "This is a sleeping giant for facilities departments across the country." ■





A campus in Savannah supports citywide renewal

The Savannah College of Art and Design, founded in 1978, has never had a typical campus. Instead, it has bought and renovated buildings around the city, creating a network of more than 50 school buildings. Motels have been converted to dorms, an old movie theater was rehabilitated, and factory buildings were adapted as studios for artists. "Savannah never experienced urban renewal, so we found many buildings, sometimes in bad shape but with good bones, that were well-suited to adaptive reuse," says SCAD president Paula Wallace. "In this way, we have become a big force in city development." *N.L.*

IMAGES: COURTESY FRANK O. GEHRY & PARTNERS (TOP); PORPHYRIOS ASSOCIATES (MIDDLE); SAVANNAH COLLEGE OF ART AND DESIGN (BOTTOM FIVE)

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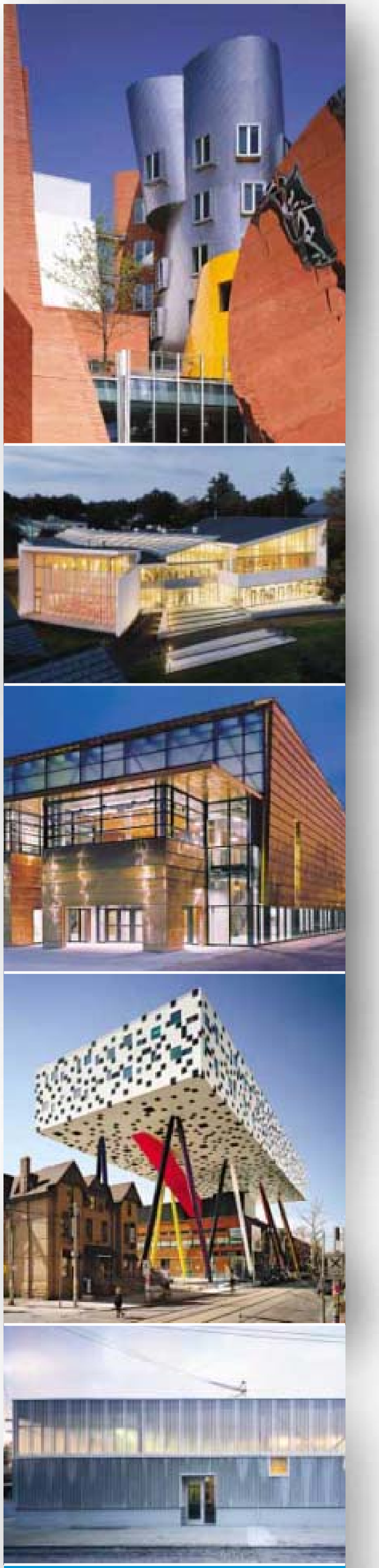
Facing the Future

On campus, architecture transforms student life and learning

By James S. Russell, AIA

By putting the Ontario College of Art and Design's Sharp Center on stilts (page 124), is Will Alsop making some kind of joke about higher education? It's no shrinking violet, that's for sure, but sticking what is essentially a loft for art students up in the air is just one of the many ways colleges and universities are redefining their mission using architecture. We devoted this month's project pages to these institutions because they are using design talent in such extraordinary ways. (We'll be looking again at college buildings in a December Building Types Study.) Campus construction has often been deemed little more than a headache, costing too much and seemingly distracting staff from their real job of educating students. As Nancy Levinson reports (page 86), university leaders nationwide see little choice but to embark on sweeping renovation or expansion plans, though many now recognize opportunities to use architecture to transform student life or to house cross-disciplinary team-based research. Research is a high-stakes endeavor, which is why MIT sanctioned so rich and detailed a collaboration between Gehry Partners and the faculty of the Stata Center (page 98). Those stakes include retaining valued faculty, attracting the best students, and speeding the delivery of discoveries. MIT is hardly alone.

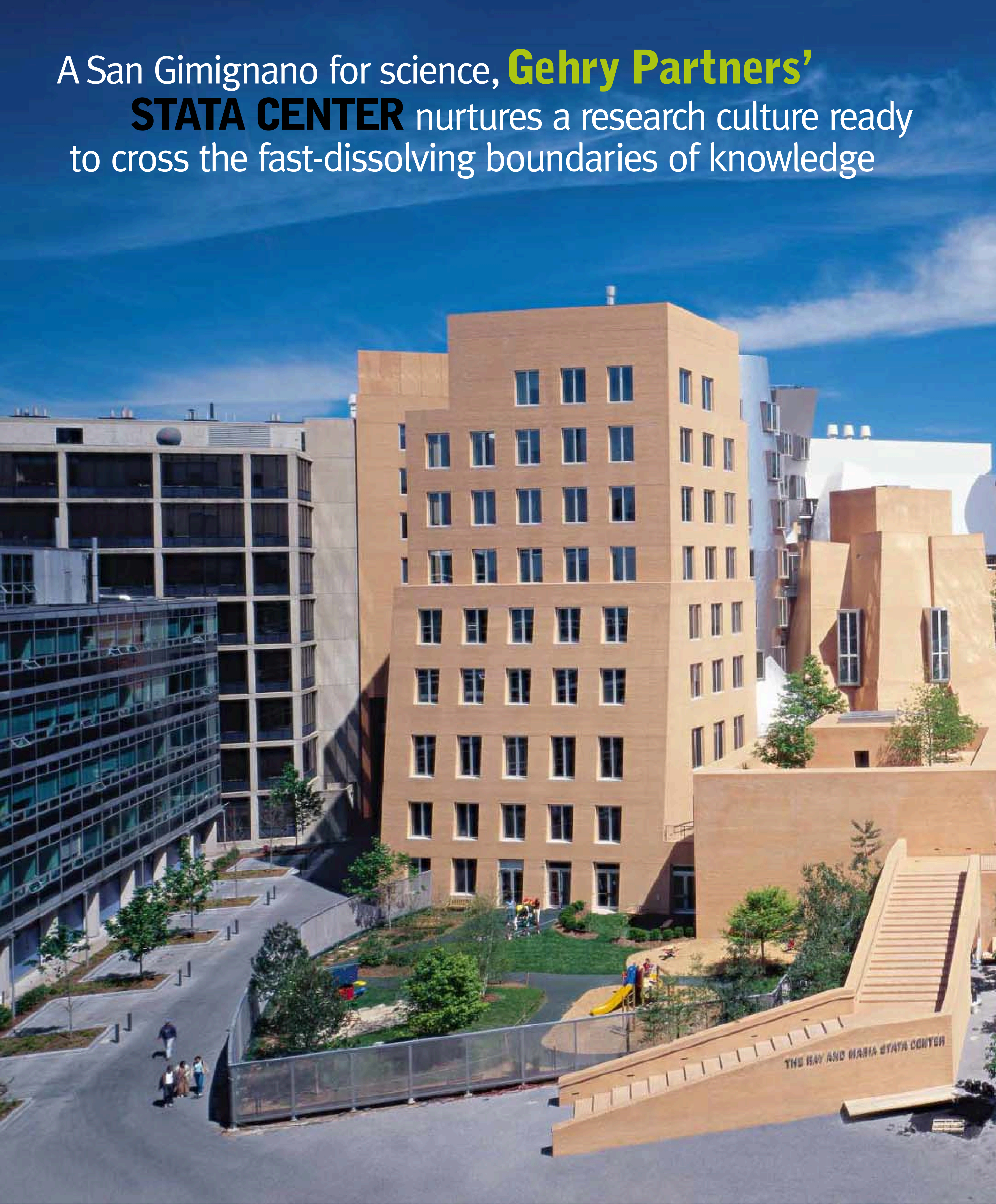
Whether the modern student needs more help finding friends and colleagues, or whether the competitive pressures of university life place too much strain on students' health—take your choice—higher-ed institutions everywhere are responding by building inviting student centers, like the curving, covered street Weiss/Manfredi created for Smith College (page 112). Architects for small colleges and cash-strapped state institutions also deliver high-amenity facilities on skinnier budgets. In Toronto, Brian MacKay-Lyons designed a light, airy Academic Resource Centre (page 120) using a straightforward volume in resilient yet modest materials. Jensen & Macy show how to build a suave yet adaptable arts work space (page 128) on a budget of almost nothing at all. ■



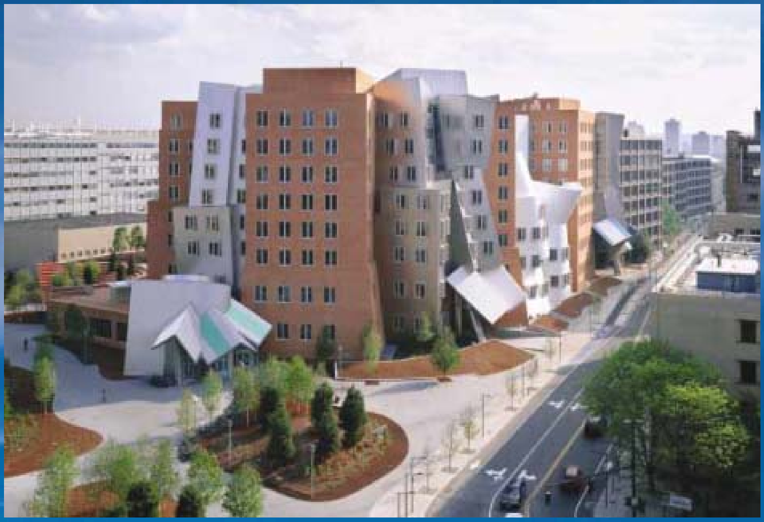
(From top): Stata Center, MIT; Smith College Student Center; Academic Resource Centre, University of Toronto Scarborough; Sharp Center, Ontario College of Art and Design; CCA Graduate Center, California College of the Arts.

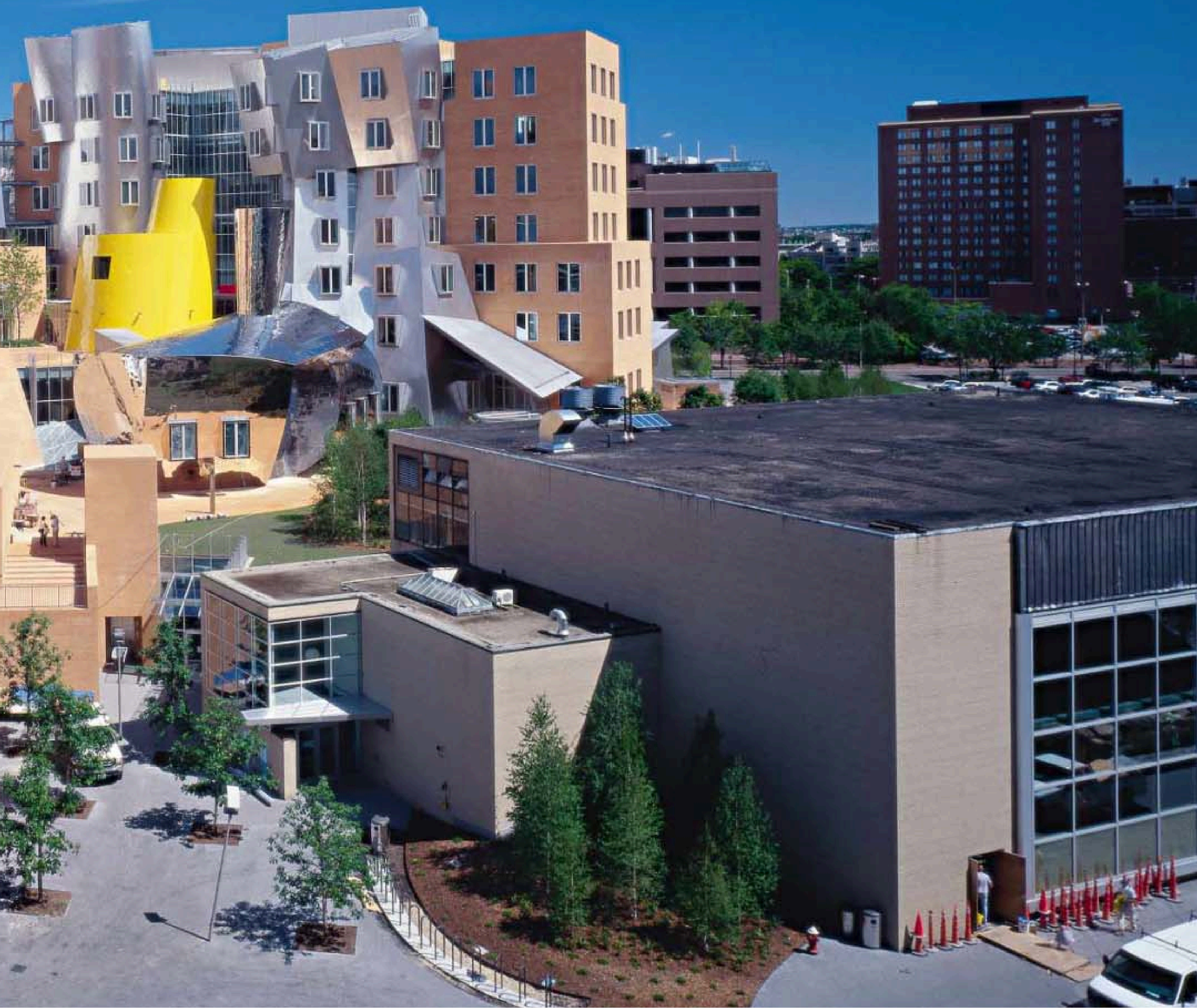
PHOTOGRAPHY: © (FROM TOP) ROLAND HALBE; JEFF GOLDBERG/ESTO; RICHARD JOHNSON/INTERIOR IMAGES; STEVEN EVANS; RICHARD BARNES

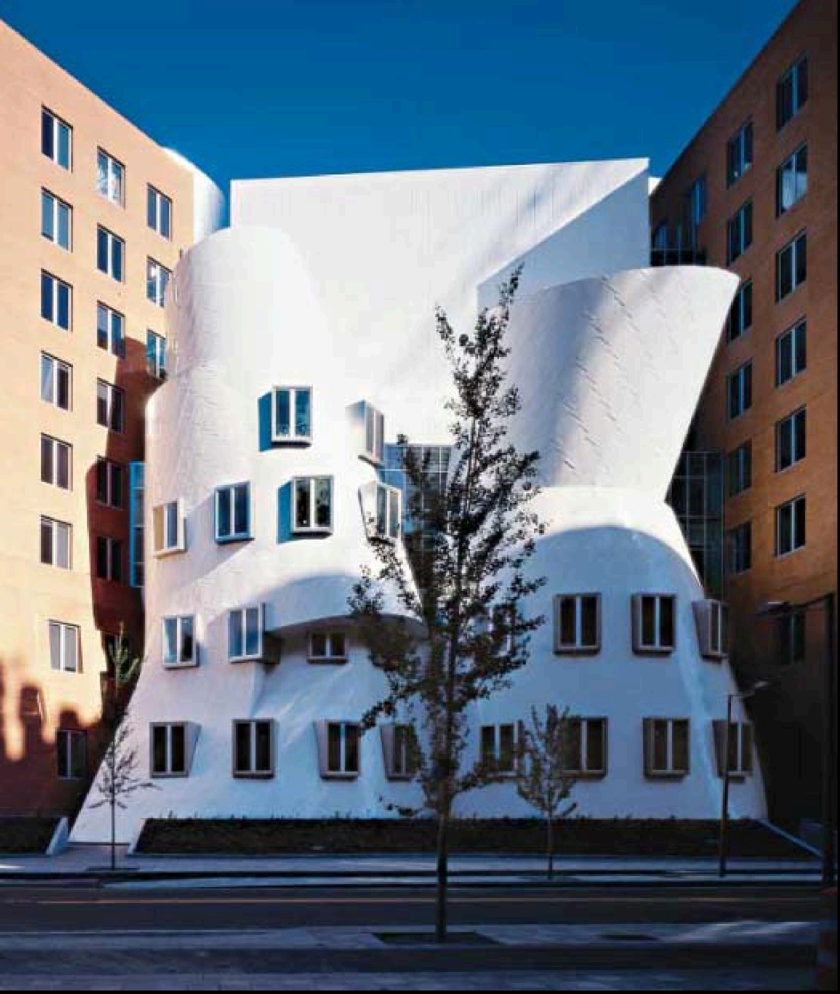
A San Gimignano for science, **Gehry Partners'** **STATA CENTER** nurtures a research culture ready to cross the fast-dissolving boundaries of knowledge

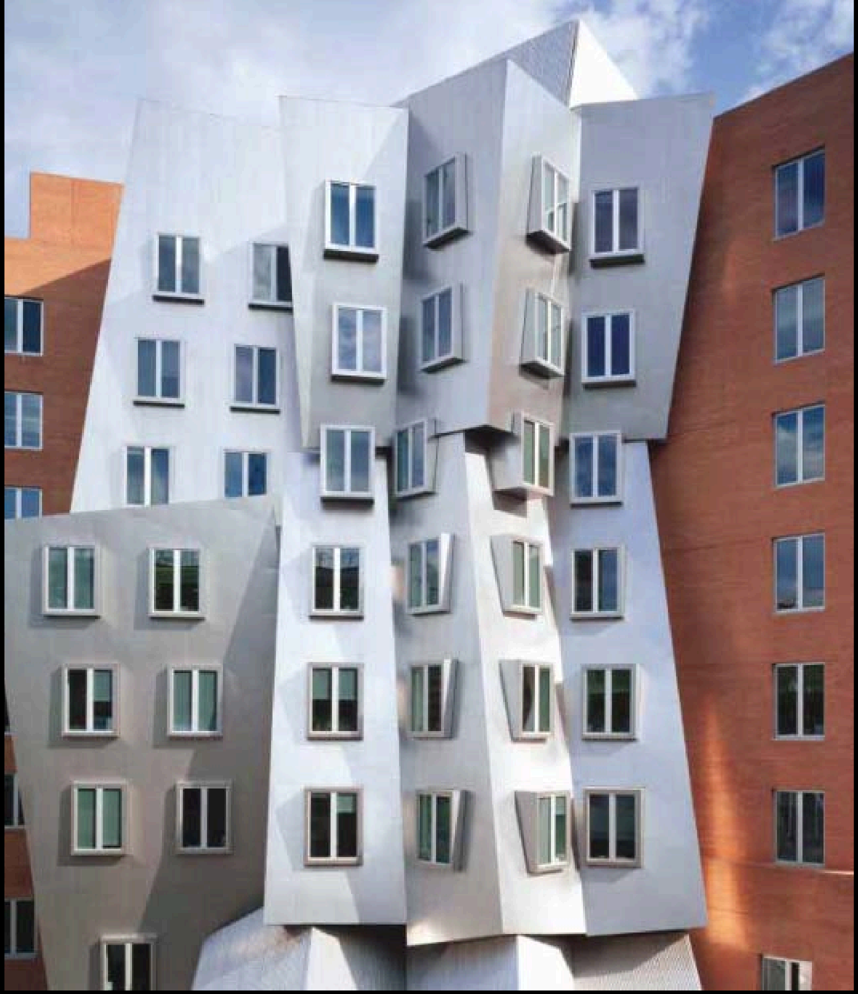

THE RAY AND MARIA STATA CENTER

Two C-shaped towers focus glassy lounge spaces on a terrace dotted with colorful sculptural meeting places (below). The dance of forms enlivens once-shabby Vassar Street (right). Folded canopies denote entry to the internal Student Street.

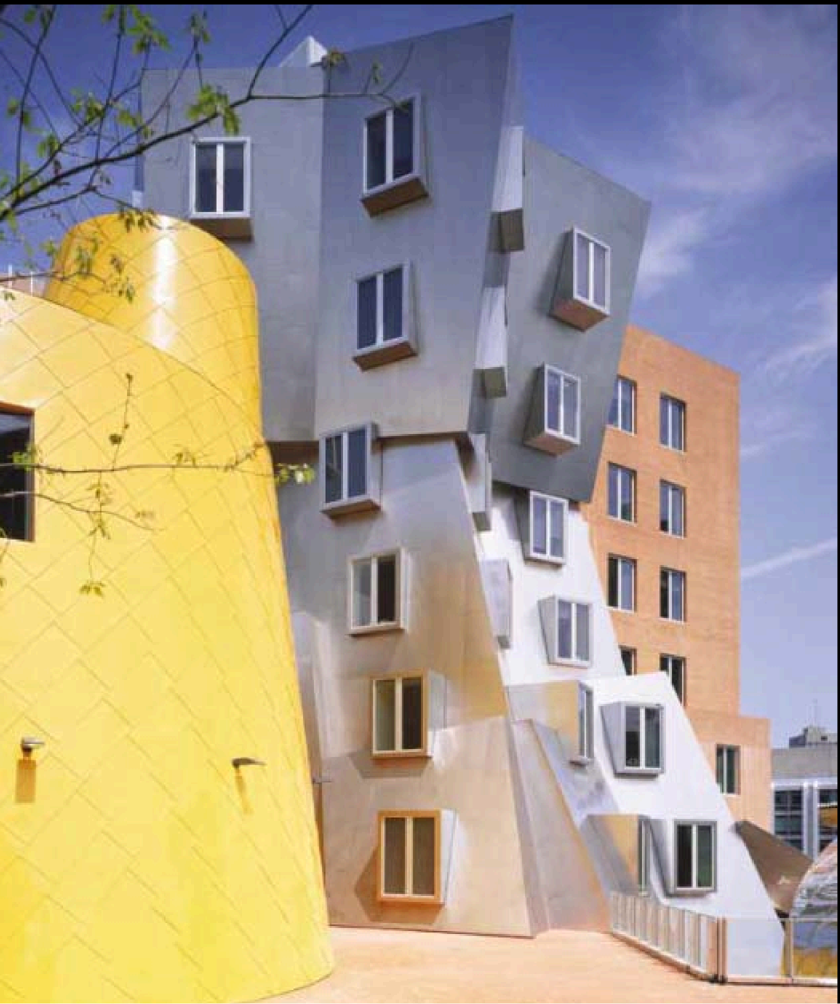


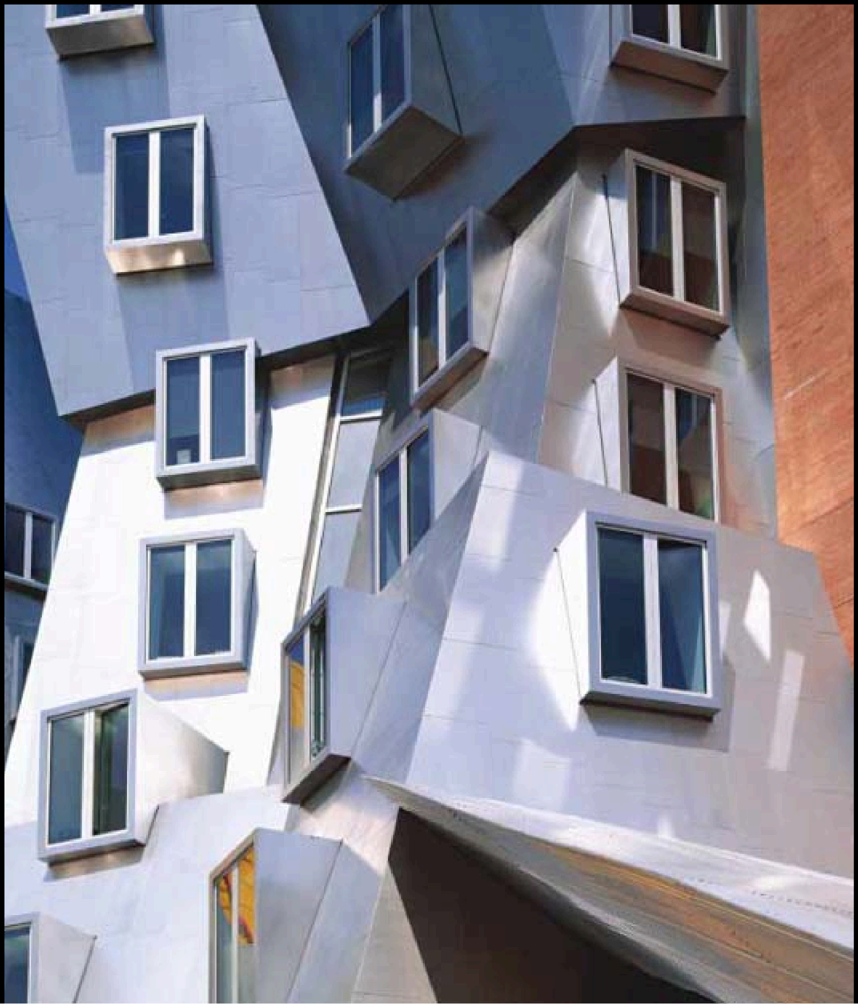


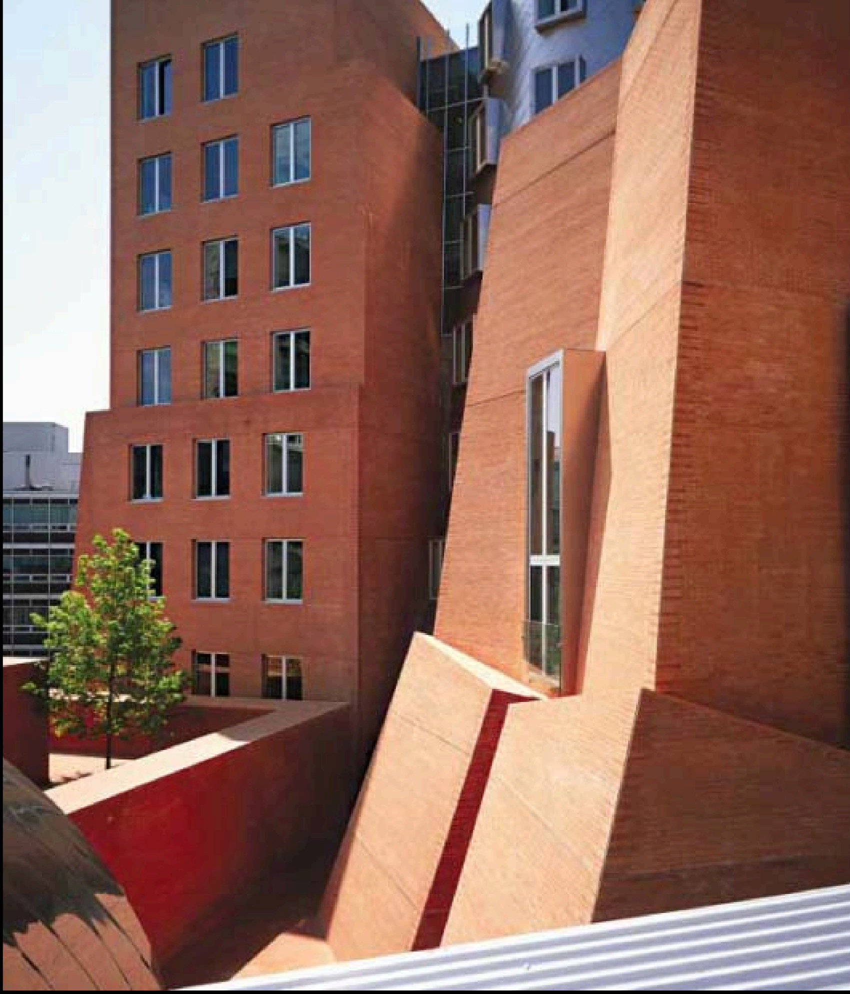




GEHRY’S FOREST OF SHAPES IN PERPETUAL “DEBATE” COULD







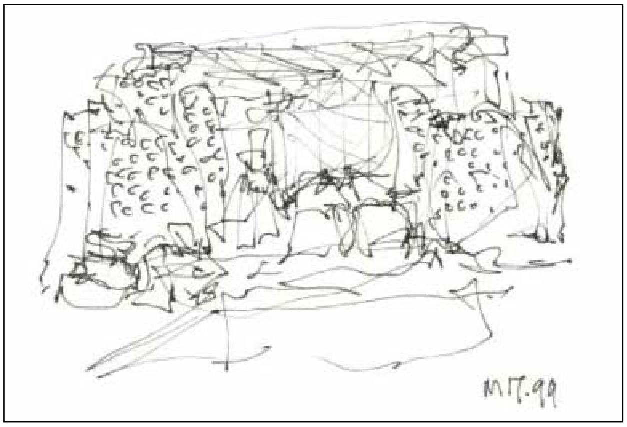
BE THE PERFECT METAPHOR FOR RESEARCH TODAY.

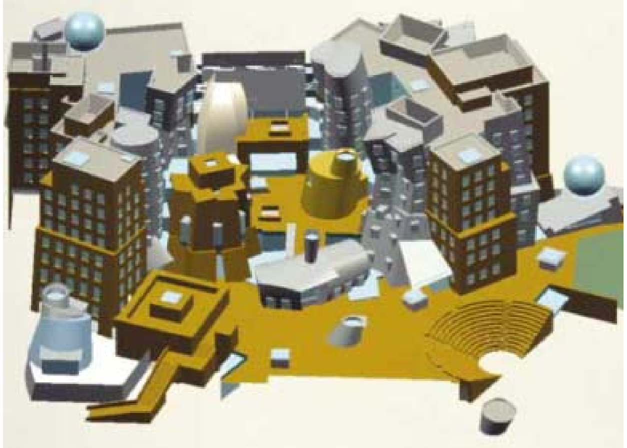
By James S. Russell, AIA

When word got out that Frank Gehry was proposing to model the 720,000-square-foot Stata Center at MIT on an orangutan village, there were those who thought the architect had finally lost it. A primate palace as the crown jewel of the campus's $1 billion building program? Imagine the teeth-grinding in high places.

Orangutan life *was* discussed, but in the context of creating what is arguably the most sociologically complex building erected on a campus in recent years. Along a dreary stretch of once-industrial Vassar Street, Gehry has conjured yet another eye-popping assemblage of curvy silos and angled towers exposing a bit of columnar leg ("there's a lot of Fred and Ginger in it," Gehry noted in an interview, referring to a famous project in Prague). Alluring as the exterior is, the story of this building is inside, where its Piranesian spatial intricacy aspires to let research leap old boundaries.

The building started out as a way to bring together several related programs in the computer sciences. It evolved, according to MIT provost Robert Brown (who joined the project when he was dean of the school of engineering), because the researchers wanted more openness, community, and easier ways to collaborate. Everyone's heard this before: Making idea sharing possible is part of the program of virtually every research building. At MIT, this desire got elevated to an obsession. Why?





The hivelike intricacy of the design opens up offices, lounges, and labs to view. There's always the possibility of finding the person who has the answer to the question you have not yet thought to ask.

Two trends drove this $300 million commitment by MIT, according to William Mitchell, who was involved very early as dean of the architecture school and now runs its legendary Media Lab. "Most significant research gets done by research groups and research teams; its very much a social process," he said, noting, "a huge amount of what's important happens where fields intersect and cross over." Scientists have had to declare ivory-tower solitude all but dead, he explained. Competition for grants, students, and discoveries requires researchers to draw together fields that 10 years ago would have seemed to have nothing in common.

The focus on easy interaction and collaboration emerged early in the programming process, but deciding how these goals would be realized took years to figure out. "These guys are iconoclasts," said Gehry. "They hide out in their offices. They're loners and don't want to talk to each other. But they're also ambivalent. They *want* to talk to each other." It was one of the most in-depth—and contentious—program processes the firm was ever involved in, according to Craig Webb, the project designer at Gehry Partners.

Put their heads in a new place

"I predicted that people would tell us what they wanted without realizing that what they described was what they already had," said Gehry. That's exactly what happened, and it seemed to create an impasse. To "put their heads in a different place," explained Webb, the firm made models using analogies drawn from other cultures to illustrate possible social models of research. Shoji screens in a "Japanese house" suggested malleable realms of public and private, but Gehry notes, "they hated that." A Colonial mansion fixed public areas below private offices. "It raised the issues of privacy versus flexibility and proximity to the workplace," explained Webb. "They hated that, too," said Gehry. Rachel Allen, a staffer in Gehry's office, came up with the idea of using examples from animal communities. One model featured an architectural prairie-dog town. With private spaces below, "you would 'pop your head up' to see what others are doing in the communal space," explained Webb.

Then came the orangutans. Since family groups spend their days together on the ground but sleep in separate nests in trees, the firm made a model that placed spaces for quiet, private work a level above areas for meeting, relaxing, and conversation. They hated that, too, said Gehry. "They thought we were calling them orangutans. But it started the conversation, and made what we've built possible."

Out of these intense discussions came a building that makes, as Mitchell calls it, "a broth of people to enable new intersections of thought and ideas to happen." The most public realm is the ground floor Student Street. According to Provost Brown, the university "needed a space that was open and accessible to the whole MIT community." A report commissioned by the institute had underlined an imperative to make student life more amenable, not just to attract the best (though this was certainly an important reason), but because students have too often found high-pressure technology environments socially isolating, and too many suffered for it—a few even taking their own lives.

So MIT added to the academic program a fitness center, daycare center, classrooms, and food service to the street. Festooned with intertwining overhead stairways and shapes from the floors above plunging through the ceiling, it urges students to slow down by offering eddies of space fitted out with benches, computer terminals, and blackboards.

As John Guttag, head of the department of electrical engineer-

Project: *The Ray and Maria Stata Center for Computer, Information, and Intelligence Sciences, Cambridge, Mass.*

Owner: *Massachusetts Institute of Technology*

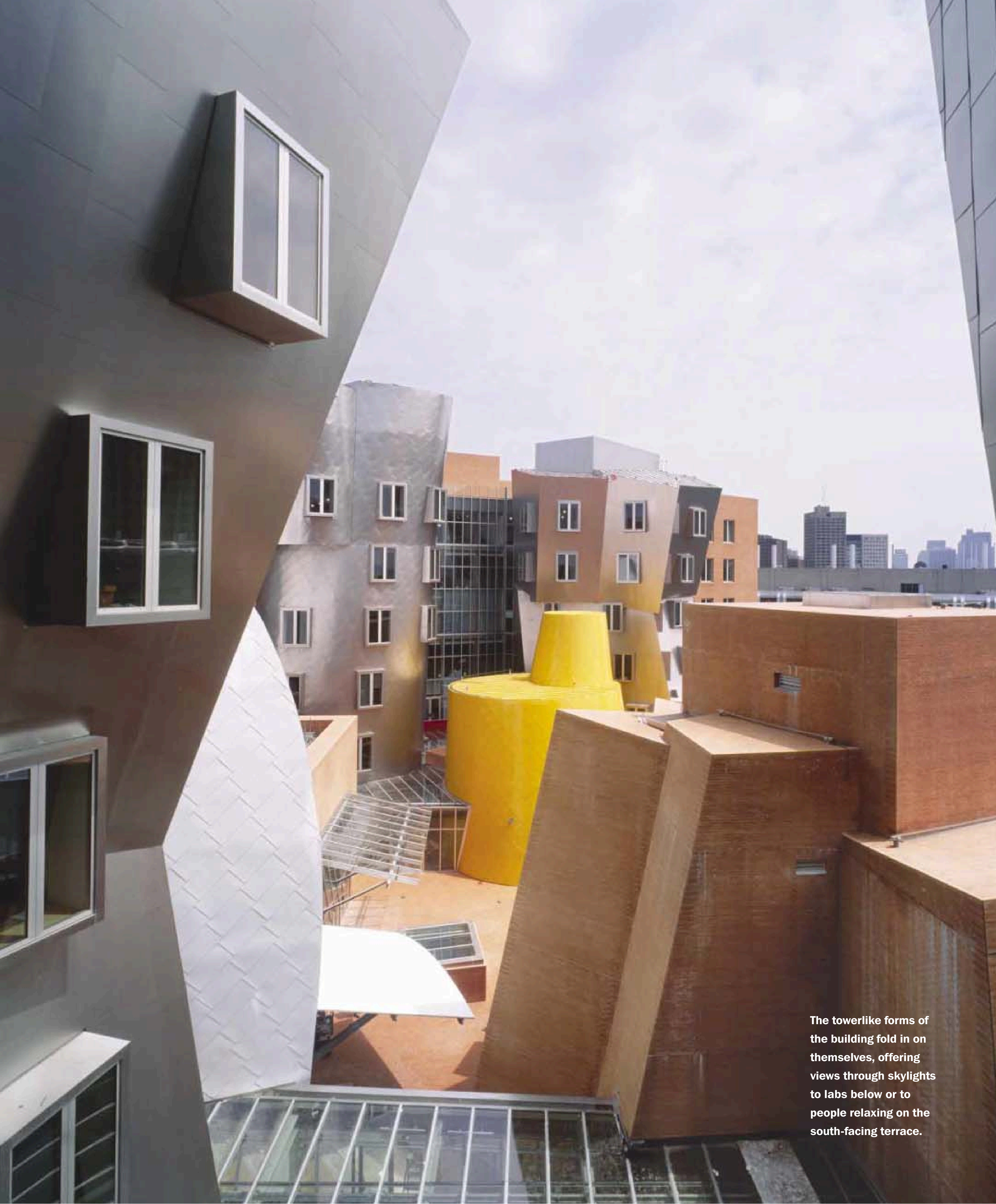
Architect: *Gehry Partners—Frank Gehry, Jim Glymph, Craig Webb, Marc Salette, Rachel Allen, Larry Tighe, David Rodriguez*

Associate architect: *Cannon Design*

Engineers: *John A. Martin & Associates, Martin/Martin & ABS, CBI Consulting (structural); Vanderweil Engineers (m/e/p)*

Construction manager: *Beacon Skanska*

PHOTOGRAPHY: © ROLAND HALBE, EXCEPT AS NOTED; PETER VANDERWARKER (LARGE IMAGE, FIRST SPREAD; PAGE 100, TOP LEFT)
MODELS AND RENDERINGS: COURTESY GEHRY PARTNERS



The towerlike forms of the building fold in on themselves, offering views through skylights to labs below or to people relaxing on the south-facing terrace.

The virtual building: a model of efficiency, to a point

"We took the digital files from the designers, and 12,000 man-hours later, we had ourselves some shop drawings!" said Tony Micielli, a project manager at CAPCO Steel of Providence, Rhode Island, at the Stata Center's opening in May. His comment drew laughter from a crowd who packed the center's auditorium to hear the project's team members discuss how the building's digital model was used during design and construction.

Building Gehry's work has always necessitated a combination of technical prowess and close relationships with contractors and fabricators that's still uncommon in architecture today. The Stata Center was no exception, especially given the aspirations of a client like MIT. Project principal Marc Salette of Gehry Partners explained the process: Physical models were digitized, refined in Rhino software, then imported into CATIA for engineering and fabrication. The CATIA model was subdivided by building element (e.g., the upper-floor towers) and then segmented, loosely, by "trade" (exterior skin and windows, concrete and steel structure, pattern for metal skin elements, and framing for support of the surface panels).

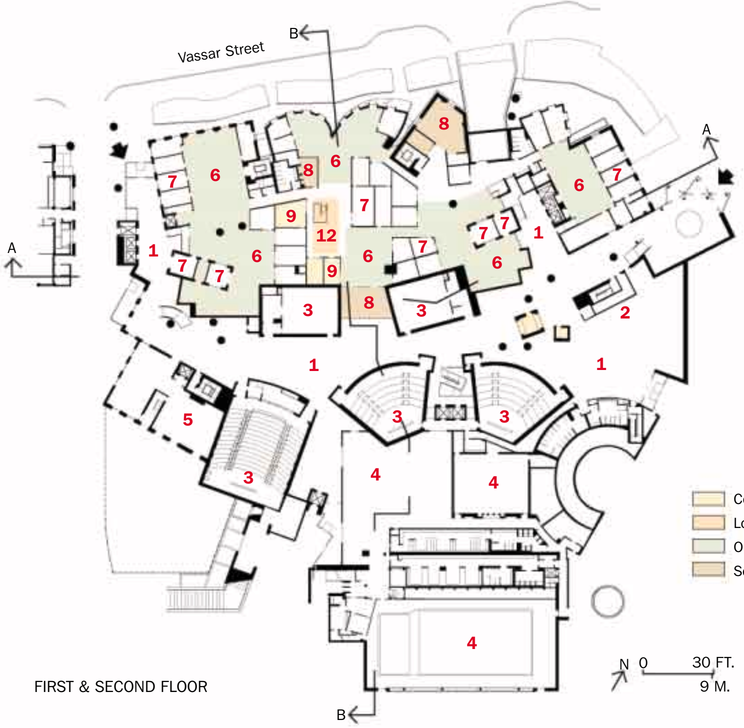
Team members used the model segments for various purposes. Engineers John A. Martin & Associates analyzed the building's structural stability and derived horizontal and vertical control information for construction. Consultants imported model data into specialized programs for analyses of daylighting, acoustics, and computational fluid dymanics for sizing the HVAC system. Curvature studies of the towers and other features allowed engineers to design their components from primarily flat, straight surfaces and members, which are easier to make than curved ones. Mock-ups and full-scale production of glazing components and the facade's metal panels were manufactured from the CATIA files.

Not that the model was always ready for plug-and-play. Micielli's comments, echoed by others, pointed up the struggles in producing detailed shop drawings from the structure and framing models. He sees potential, though, for using the models to estimate steel tonnage and cost during bids. And the team emphasized the human element of the process. "We wanted to do whatever it took to be the most efficient—not necessarily the most technologically advanced," said Paul Hewins, the project executive from general contractor Skanska. "It took a lot of coordination to figure out when model information was needed, versus when it was in the way."

Now that the dust has settled on Vassar Street, what will come of the models? "That's an excellent question," said MIT's Chris Terman, a faculty representative to the project. "One day, Skanska could unplug their servers and we'd all be in trouble." MIT would like to continue amending the models as the building evolves, but the time and expense of upkeep aren't part of the project's scope. Though the models may not see life after occupancy, the Gehry team deserves credit for inching toward that elusive goal, one megabyte at a time. *Deborah Snoonian, P.E.*

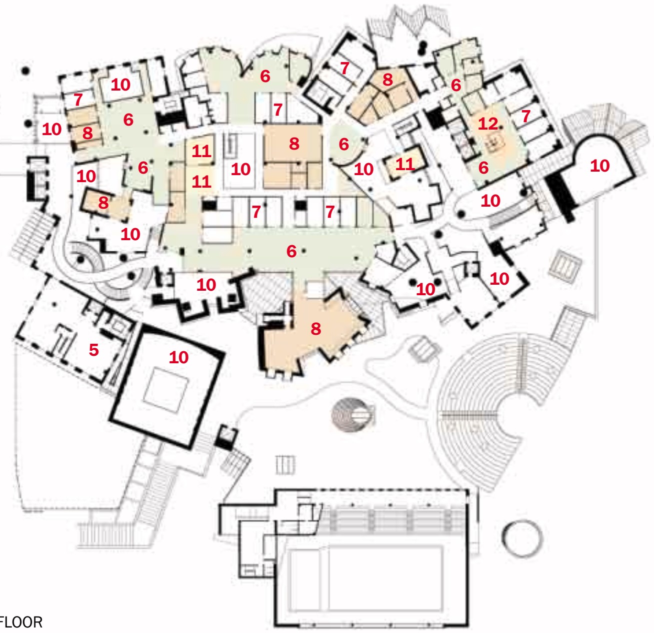
Skylights that poke through the fourth floor (opposite, right) spread daylight into the Warehouse-level labs (this page). Conference rooms (bright painted tower, opposite, left), offices, corridors, and stairs look in on the action.

PHOTOGRAPHY: © ANDY RYAN



FIRST & SECOND FLOOR

- ▨ Common space
- ▨ Lounge
- ▨ Open lab/workspace
- ▨ Segregated lab



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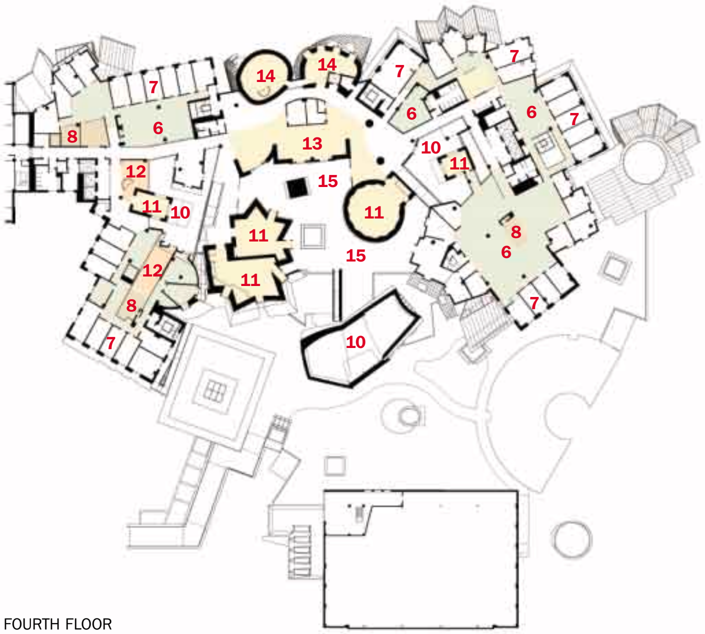

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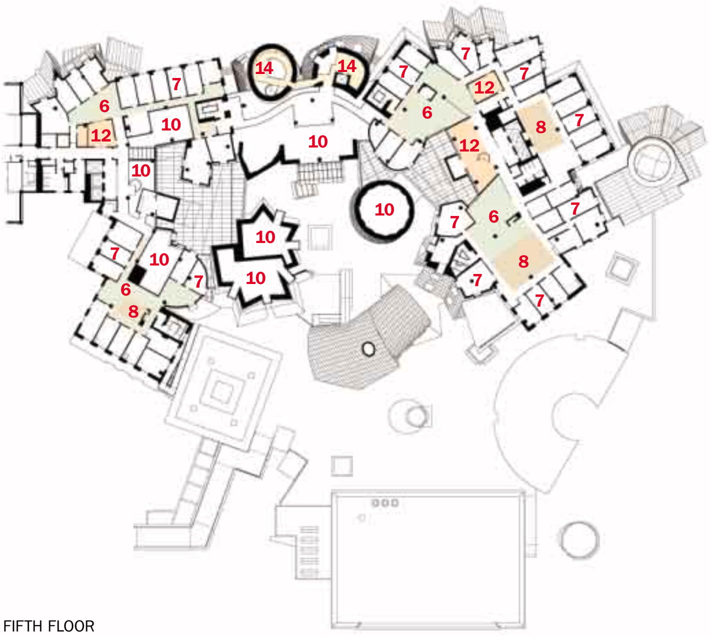

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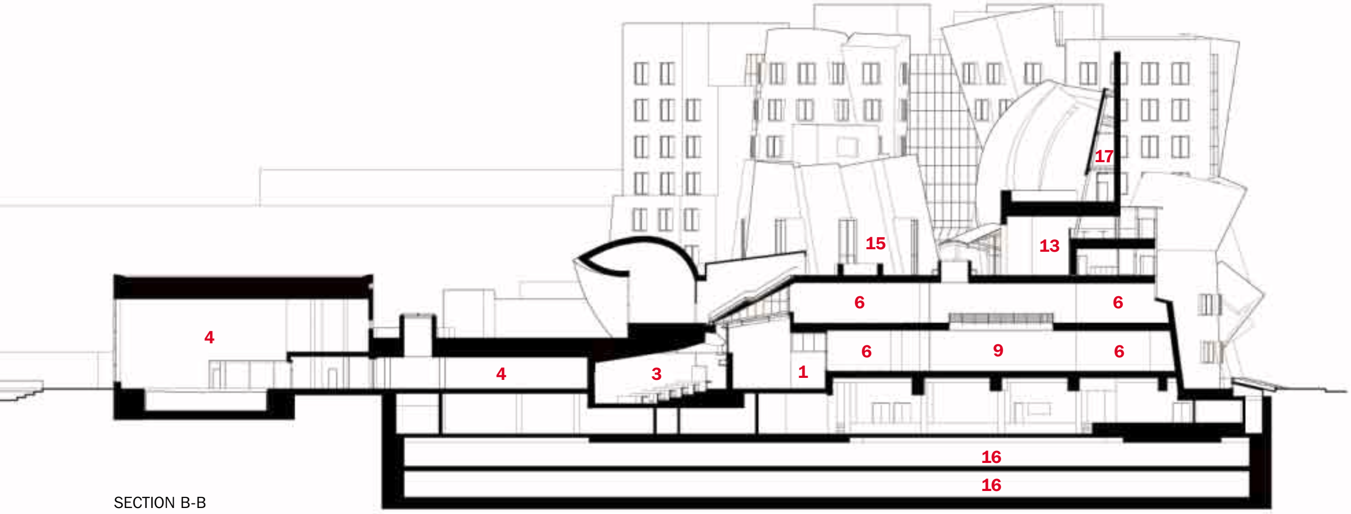
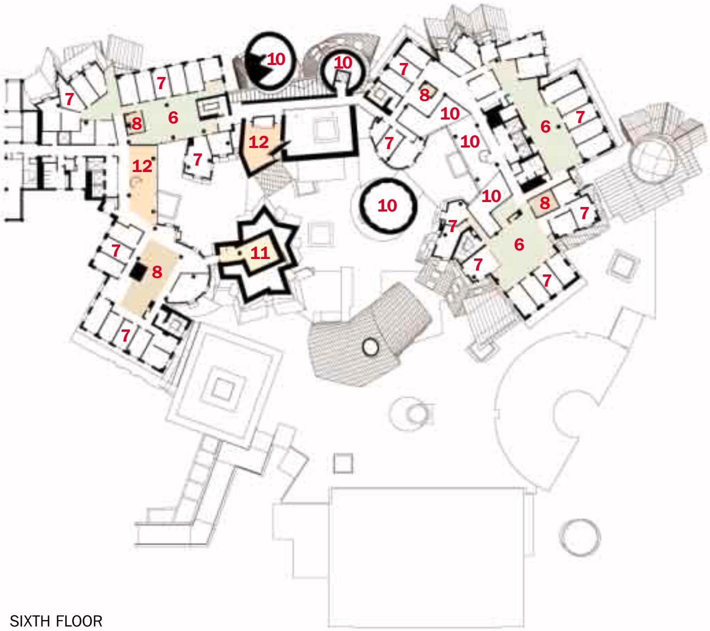


SECTION B-B

1. *Student street*
2. *Café*
3. *Classroom*
4. *Fitness*
5. *Open lab/work space*
6. *Day care*
7. *Office*
8. *Segregated lab*
9. *Warehouse shared*
10. *Open*
11. *Meeting*
12. *Lounge*
13. *Dining*
14. *Pub*
15. *Terrace*
16. *Parking*
17. *Windscreen*



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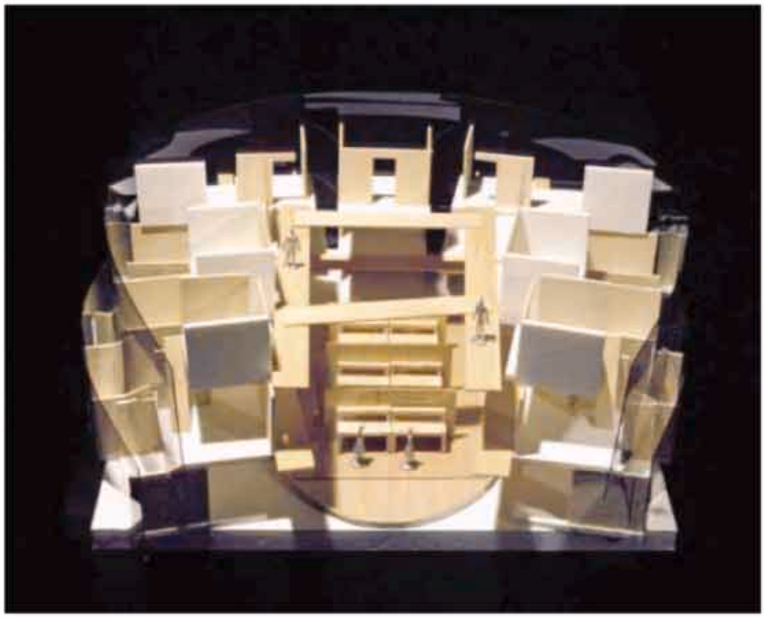

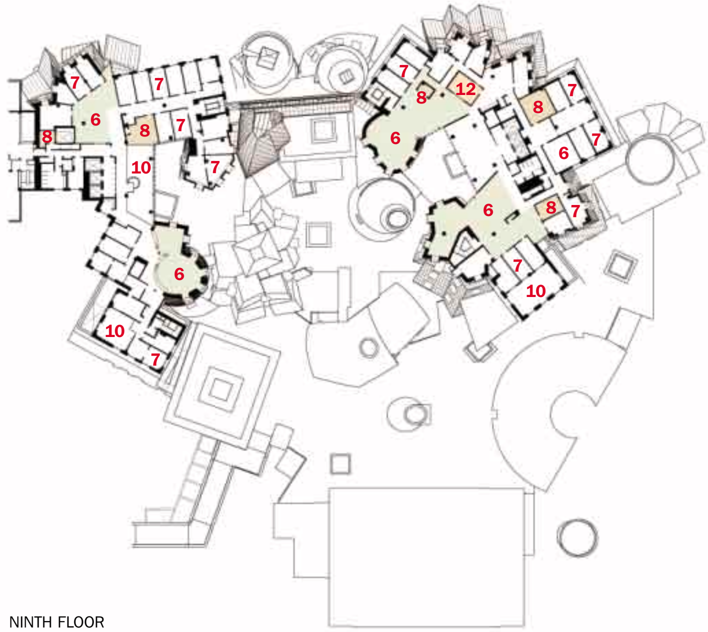

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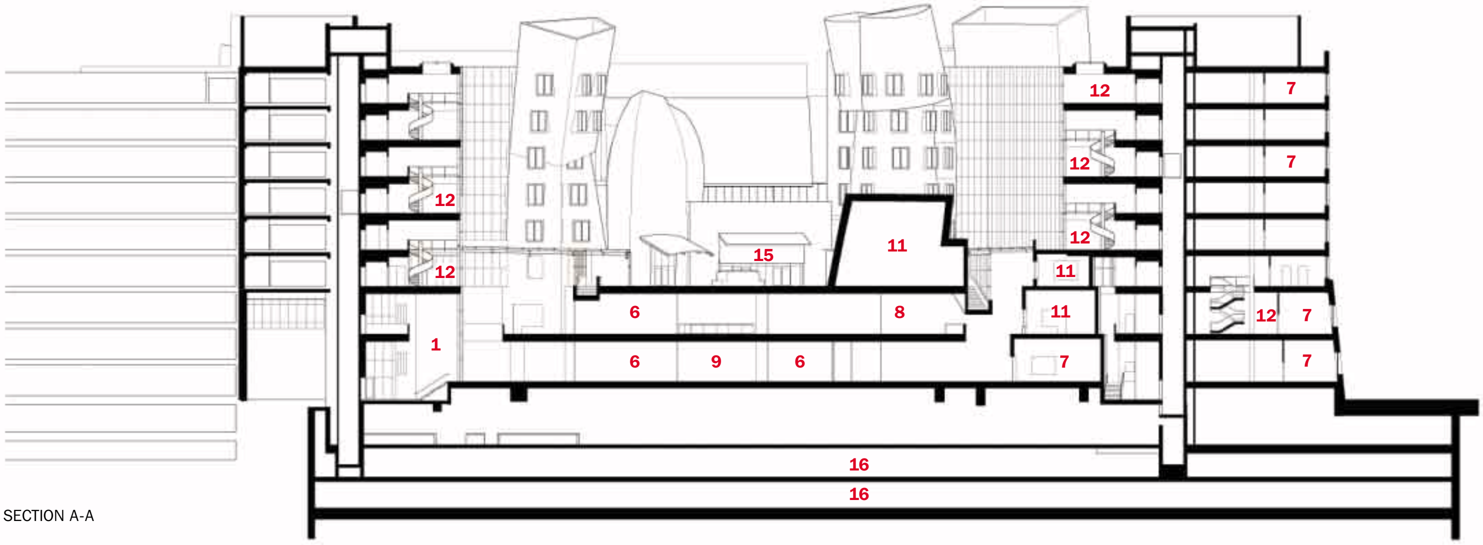
NINTH FLOOR

The intricately choreographed gradations between private and shared space (drawings, left) could not have come about without color-coded models (above), which helped researchers understand possible social arrangements. Lounges that look down through skylights to lower-level labs were studied in models (left).



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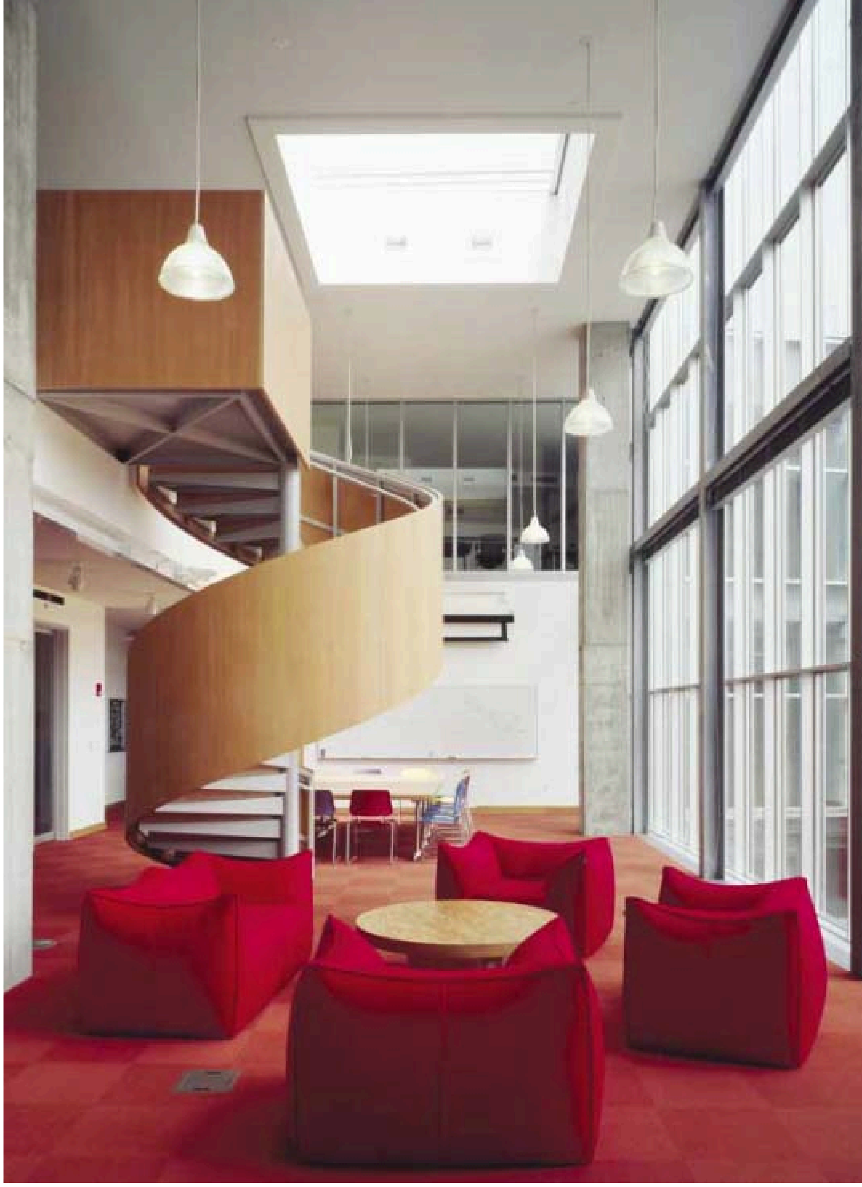
SECTION A-A



ing and computer science, explained, "One of the things it took us a while to understand is that there were layers of community. Faculty members had their students, and worked with slightly larger groups of faculty and their students. So the idea of a neighborhood emerged, where the people you expected to see every day would be."

Labs open to the light

What's called the Warehouse, which stretches over more than 40,000 square feet on both the second and third floors, is separated from the Student Street by vestibules (see plans, pages 106–107), so that, says Guttag, "this community of researchers is able to circulate freely." Within it, the building cracks itself open: Private offices and open work spaces surround two large laboratory spaces at the east and west ends, which rise to enormous sloping skylights framed over the fourth floor. "They needed these high-bay areas for heavy equipment, for graphics, visualization, and robotics," said Webb. (Some labs are fully segregated.)

A similar but finer-grained gradation of privacy occurs in the two towers that rise from the fifth floor upward. They both curve in a C-shape to focus the action on double-height lounges, each with its own spiral connecting stair, that serve the neighborhoods of researchers. The towers and the warehouse come together at the fourth-floor faculty dining space and pub, which spill onto a piazzalike outdoor terrace. Seminar rooms that might have been placed within departments were consciously grouped on this floor, poking through the terrace in a riot of brick, yellow-painted metal, and polished steel. Everyone mixes while they're getting their cookies between presentations, explained Guttag.

Real, not virtual community

The spatial intricacy and labyrinthine circulation bear no resemblance to the typical rectangular research structure—rigidly modular and zoned by mechanical services. The specificity of the Stata Center's form serves the collaborative and interactive agenda generally, rather than wrapping itself around specific functions. The dead ends and eddies of space are ideal for a quick sit-down, noted Guttag. One of the reasons the building became so large (420,000 square feet on top of a 300,0000-square-foot garage) is that so many research groups wanted to be near each other. "The lab groups in computer science wanted to be near the groups in the Artificial Intelligence Laboratory," said Webb. "They all wanted to be on the other's boundaries. Finally, they decided they didn't need the boundaries. So the two groups combined in the middle of design." (The interdepartmental facility is called the Computer Science and Artificial Intelligence Laboratory, or CSAIL.)

WHY SO MANY PLACES TO GATHER? "LOUNGES ARE WORKPLACES; SOCIAL EVENTS ARE TECHNICAL DISCUSSIONS."

“Web technology connects in lots of ways and on lots of levels,” says Tim Berners-Lee, a pioneer of the Internet. He saw an analogy in the way “the circulation stairs that appear here and there make networks,” like the stair winding over the Student Street (opposite, left). Research “neighborhoods” share lounges (opposite, right), which look into and through offices and labs (this page).

You would think that this obsession with proximity wouldn't matter anymore. After all, the building is chock full of people who have invented many of the technologies that are supposed to keep us connected without the inconveniences of personal contact. So where are the a gee-whiz interactive gizmos, the virtual communities? "They believe that the old-fashioned ways are the right ways," explained Alec Marantz, a linguistics professor and the head of the school of humanities and social sciences, "including face-to-face and casual, spontaneous interactions that involve places where you can talk together and write on something."

Whether the devotion of such a variety of spaces to collaboration will pay off is the long-term question. "We didn't measure efficiency in dollars per square foot," explained Guttag. "Lounges are workplaces. Social meetings are technical discussions. That's why we wanted a lot of gathering spaces. Though it's hard to measure, we think it's efficient." ■

Sources

Brick: *Grande*

Metal cladding: *Zahner/Karas*

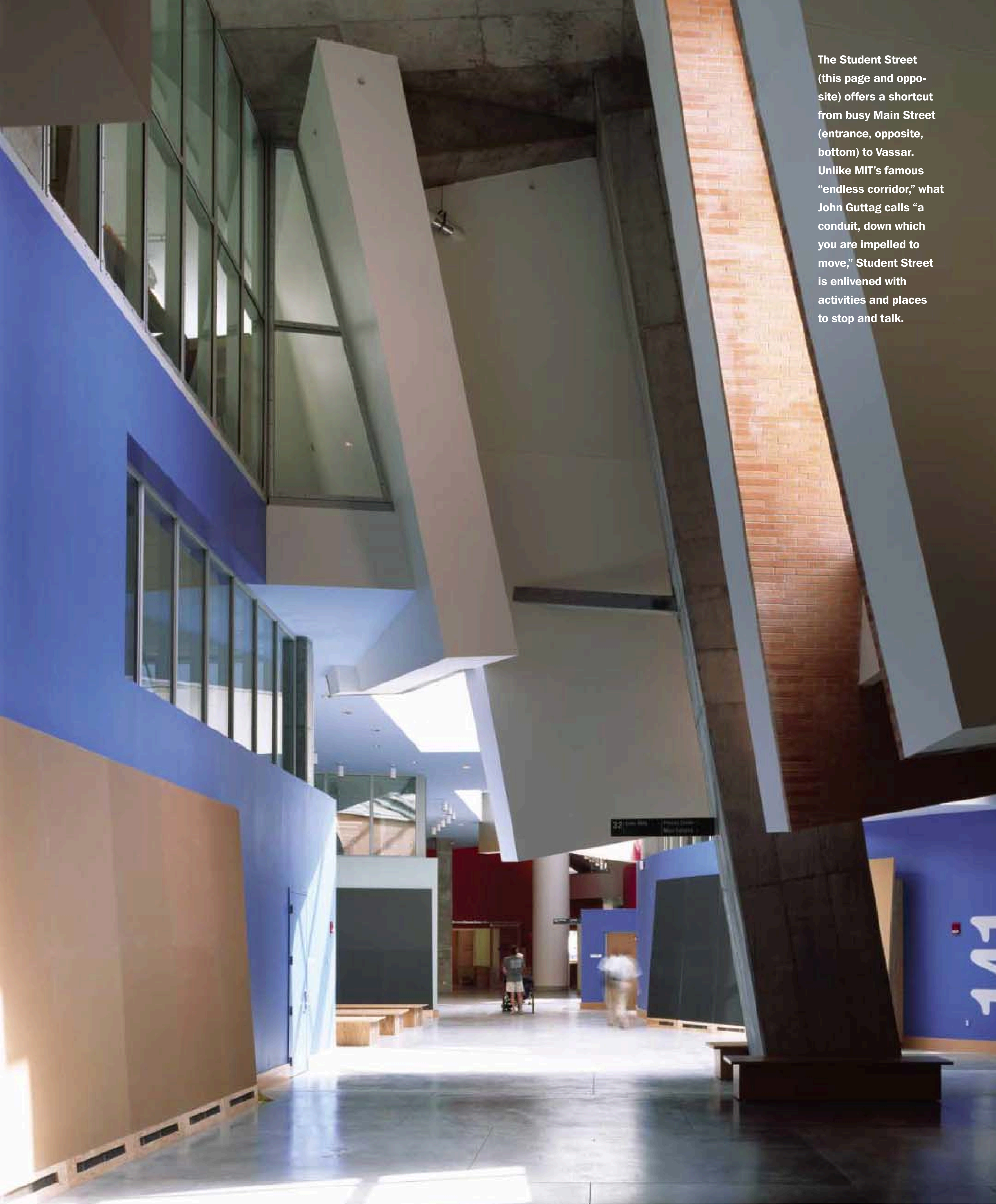
Skylights, curtain wall: *Zahner/Karas*

Roofing: *Zahner/Karas (metal); Sarnafil (PVC); Grace (elastomeric)*

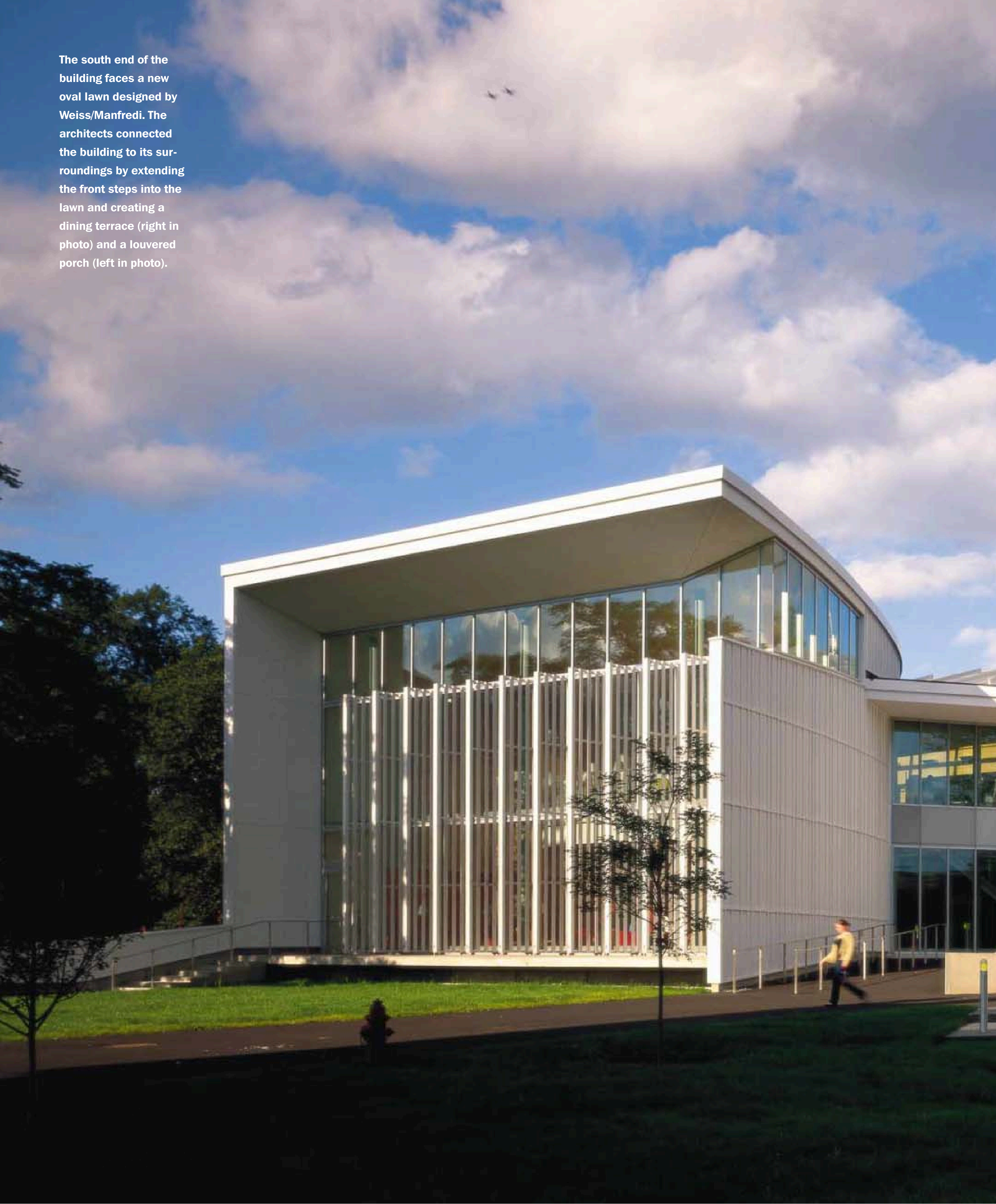
Wood doors, woodworking: *North American Woodworking*

Ceilings: *Baswophon; Ecophon*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

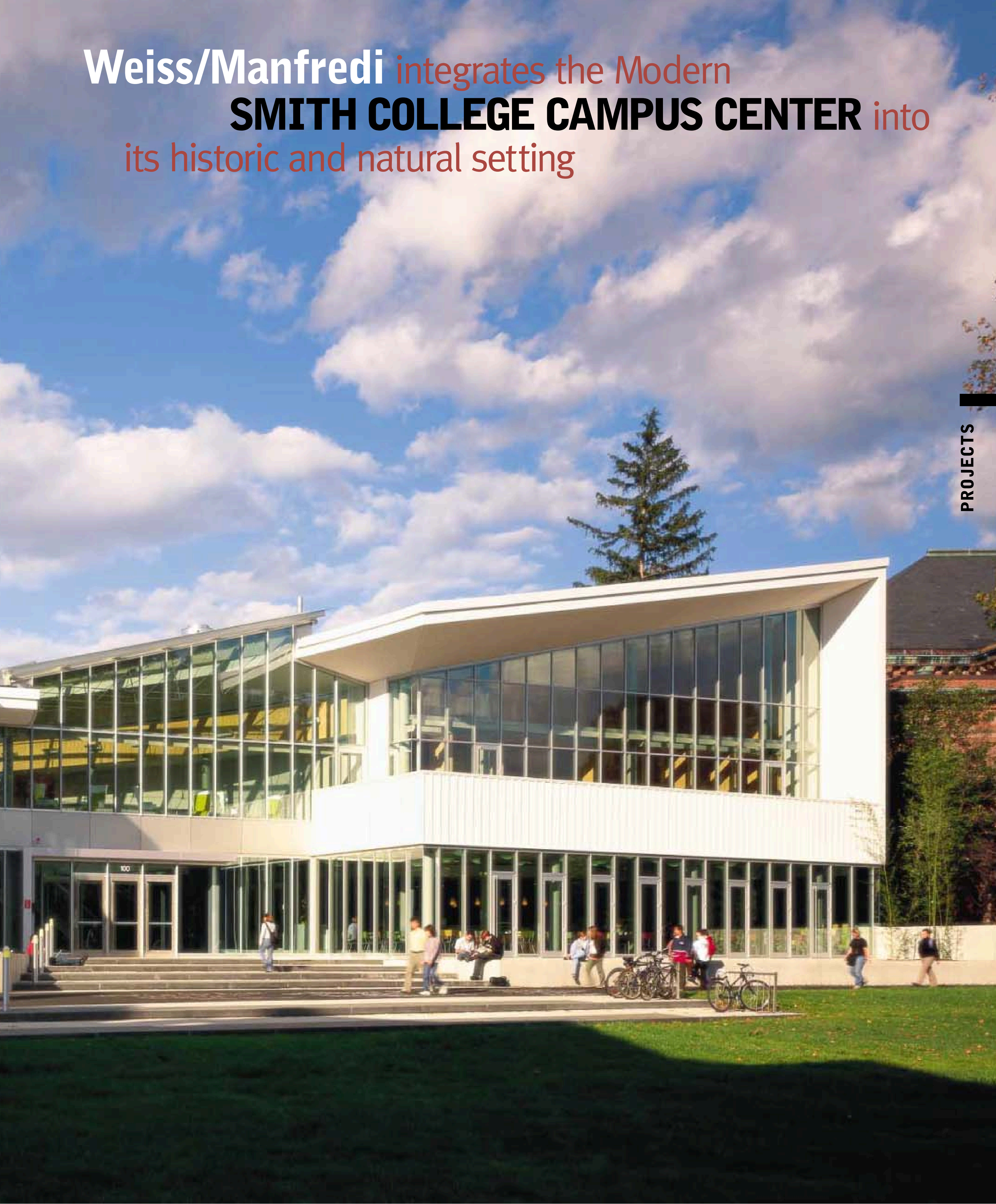


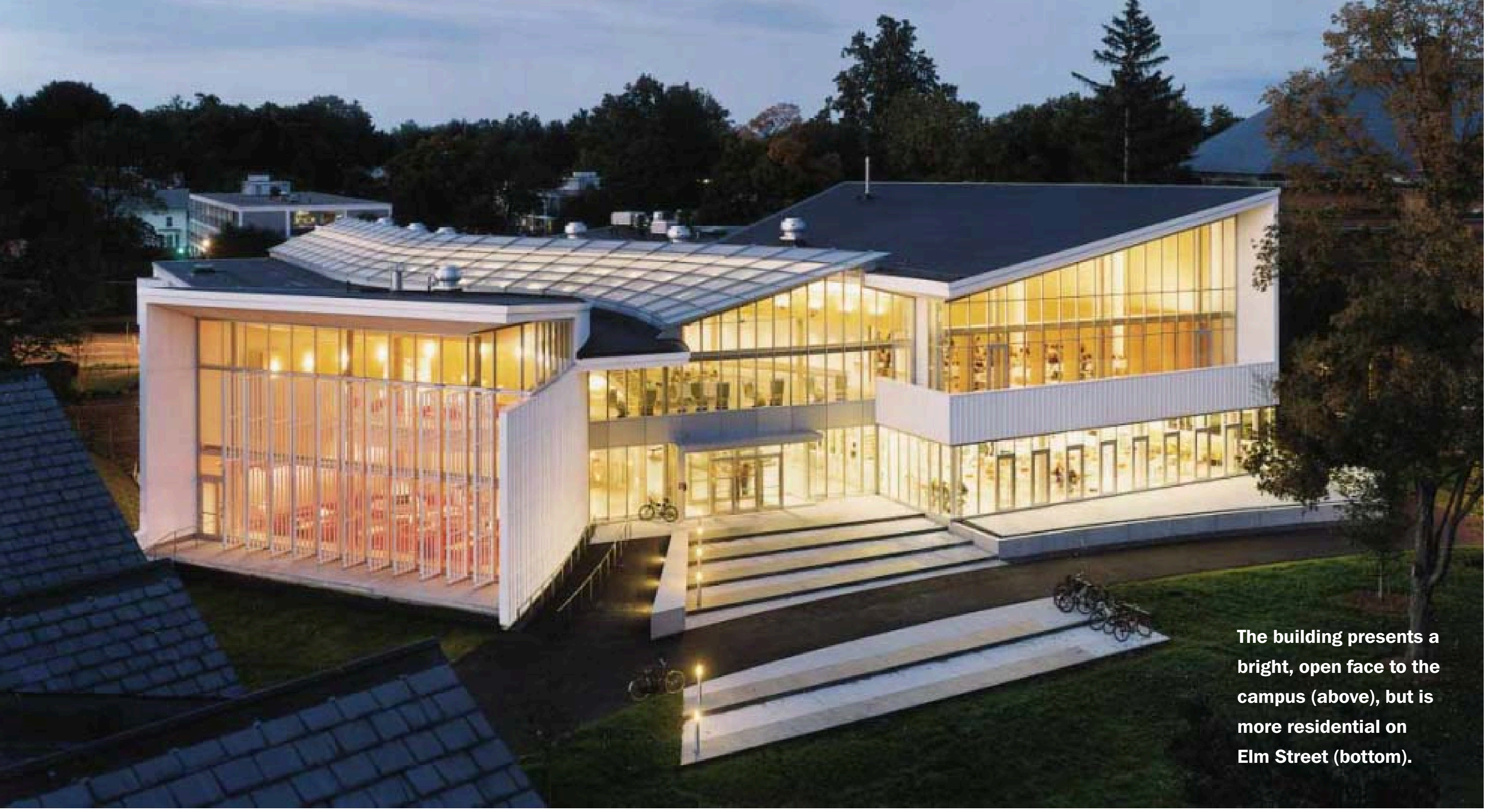
The Student Street (this page and opposite) offers a shortcut from busy Main Street (entrance, opposite, bottom) to Vassar. Unlike MIT's famous "endless corridor," what John Guttag calls "a conduit, down which you are impelled to move," Student Street is enlivened with activities and places to stop and talk.



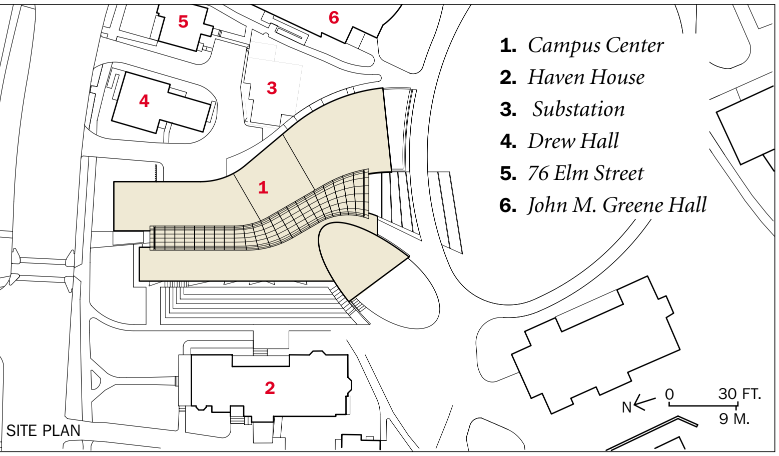
The south end of the building faces a new oval lawn designed by Weiss/Manfredi. The architects connected the building to its surroundings by extending the front steps into the lawn and creating a dining terrace (right in photo) and a louvered porch (left in photo).

Weiss/Manfredi integrates the Modern **SMITH COLLEGE CAMPUS CENTER** into its historic and natural setting





The building presents a bright, open face to the campus (above), but is more residential on Elm Street (bottom).



By Clifford A. Pearson

Marion Weiss and Michael Manfredi use the word “porous” to describe the 57,000-square-foot campus center they designed for Smith College in Northampton, Massachusetts. Under their direction, light, space, and movement leak in and out of this building, which acts as a social hub for the college. Instead of boundaries, they created permeable membranes between indoors and out, campus and town, work and play. Their design makes connections between architecture and landscape, students and faculty, old and new. While many people from the town and the college initially resisted the notion of a Modern building on the redbrick and white-clapboard campus, since its opening in August 2003, the new structure has proved to be a welcome common ground for the academic community and its neighbors.

Like the firm’s Museum of the Earth, in Ithaca, New York [RECORD, January 2004, page 112], the $23 million Smith College Campus Center both responds to its context and reshapes its site. In Ithaca, Weiss/Manfredi carved the museum into its rocky setting to express the geological nature of its collections. In Northampton, the architects designed a building that stitches together a frayed campus edge, offering a dynamic passage between town and gown. “We think Smith very much captures what theorist David Leatherbarrow observed about our work,” say the architects, “that architectural sites are not given but made. And once made, they guide the development of spatiality and construction.”

Project: *Smith College Campus Center, Northampton, Mass.*

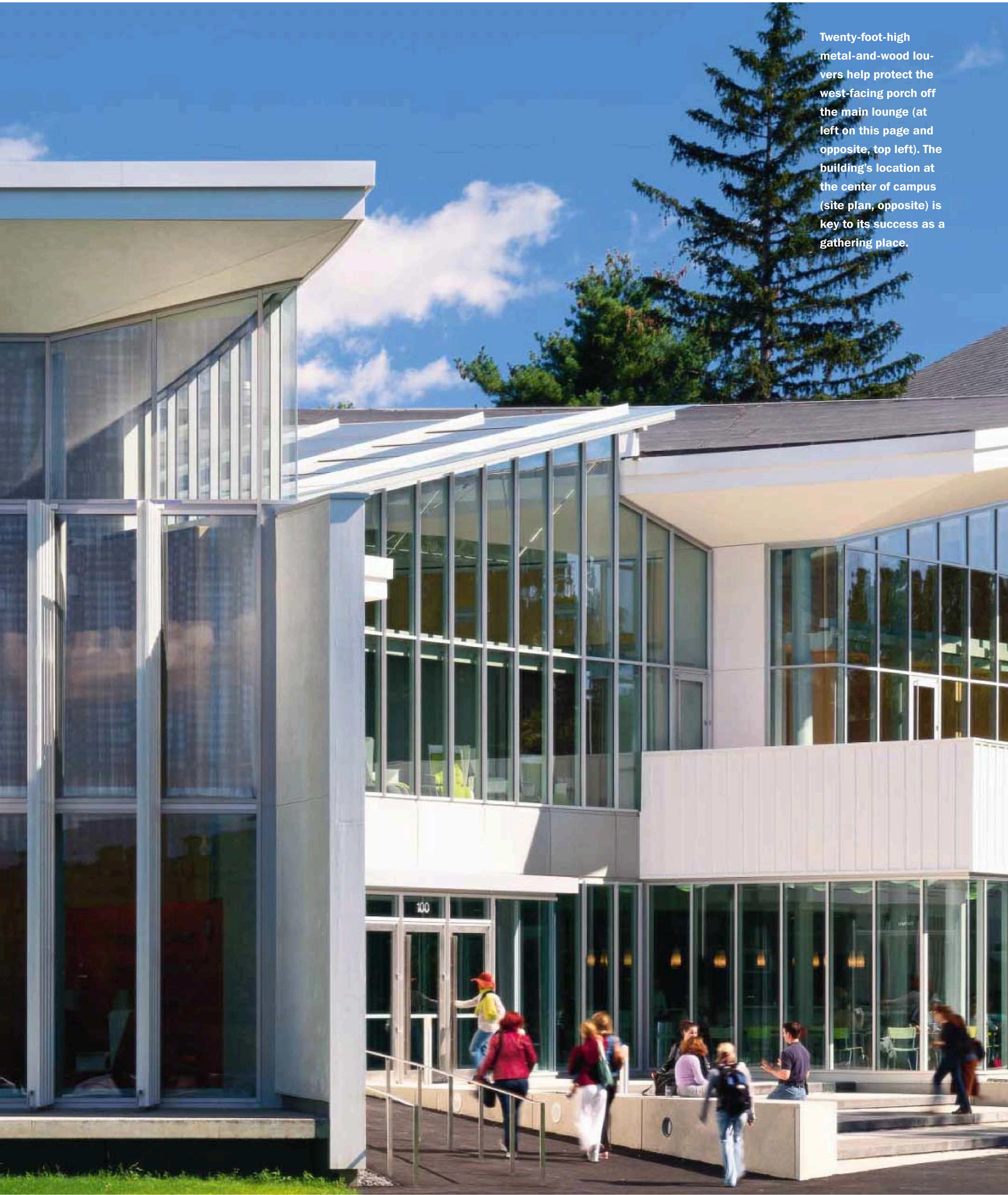
Architect: *Weiss/Manfredi Architects—Marion Weiss, Michael Manfredi, partners; Tae-Young Yoon, project manager; Armando Petruccelli, Kok Kian Goh, Lauren Crahan, Stephanie Maignan, Jason Ro, Chris Payne, Michael Blasberg, project team*

Engineers: *Weidlinger (structural); Fuss & O’Neill (civil); Jaros, Baum, and Bolles (m/e/p)*

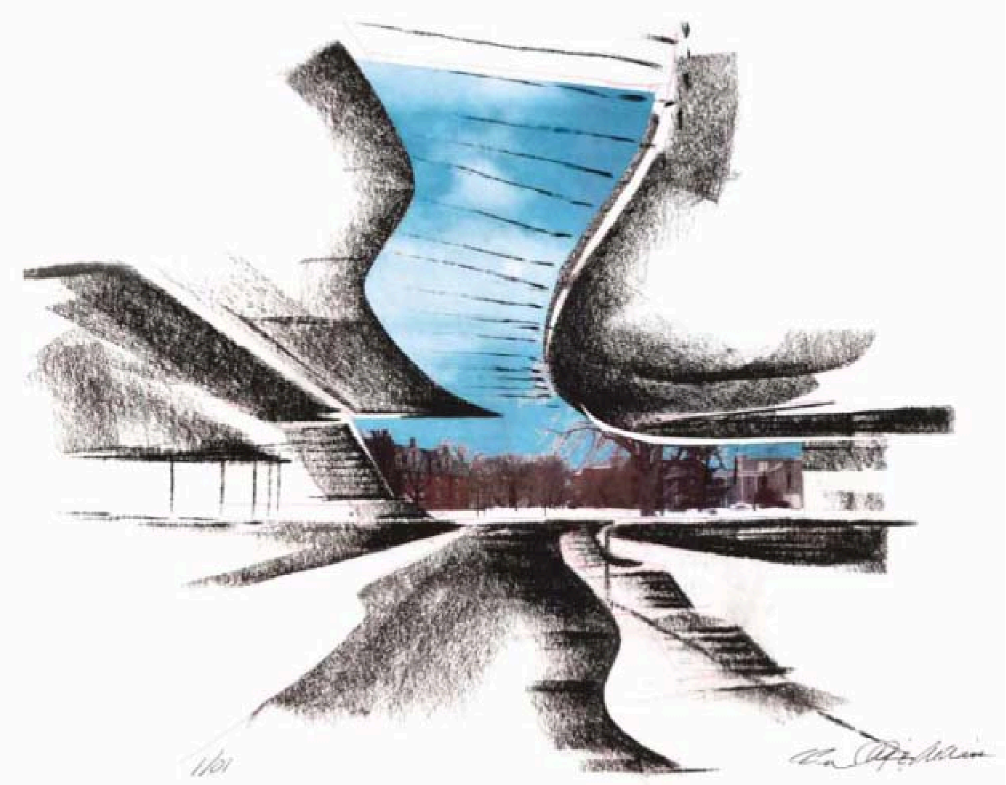
Landscape architect: *Towers/Golde*

Construction manager: *Daniel O’Connel’s Sons*

PHOTOGRAPHY: © JEFF GOLDBERG/ESTO, EXCEPT AS NOTED



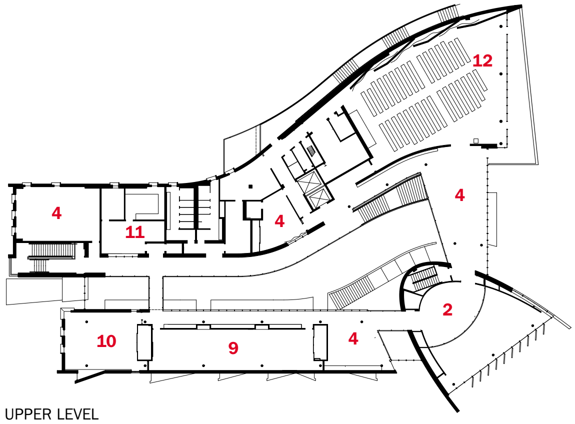
Twenty-foot-high metal-and-wood louvers help protect the west-facing porch off the main lounge (at left on this page and opposite, top left). The building's location at the center of campus (site plan, opposite) is key to its success as a gathering place.



In addition to bringing daylight from above, Weiss/Manfredi enlivened the winding atrium (left and top) with splashes of rich color on walls and furnishings. The architects designed the colorful resin tables in the atrium (second level in photo opposite), square versions in the cafeteria, and folded aluminum wingback chairs (not shown).

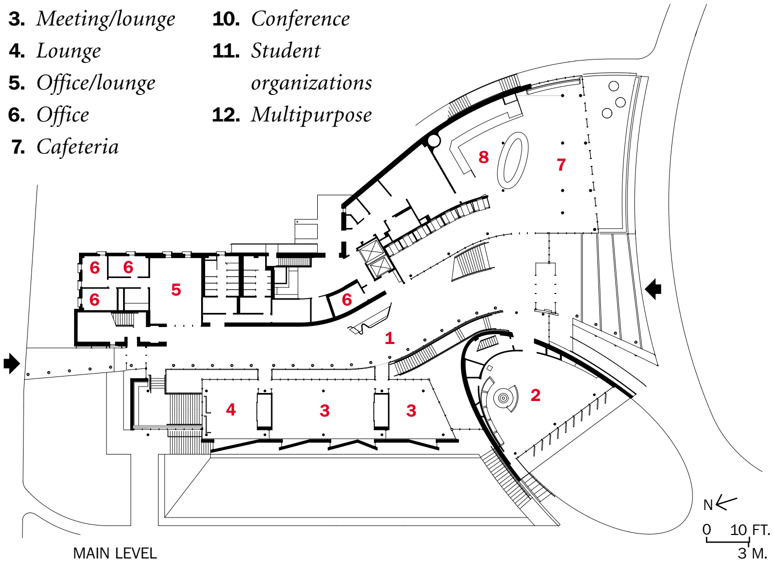
PHOTOGRAPHY: © PAUL WARCHOL (BOTTOM AND OPPOSITE)

Many of the building's most important rooms have outdoor spaces, including the two-story main lounge (left), the cafeteria (bottom), and the lounge area on the lower level (opposite). Visual connections within the building and to the outdoors are key elements of the design.



UPPER LEVEL

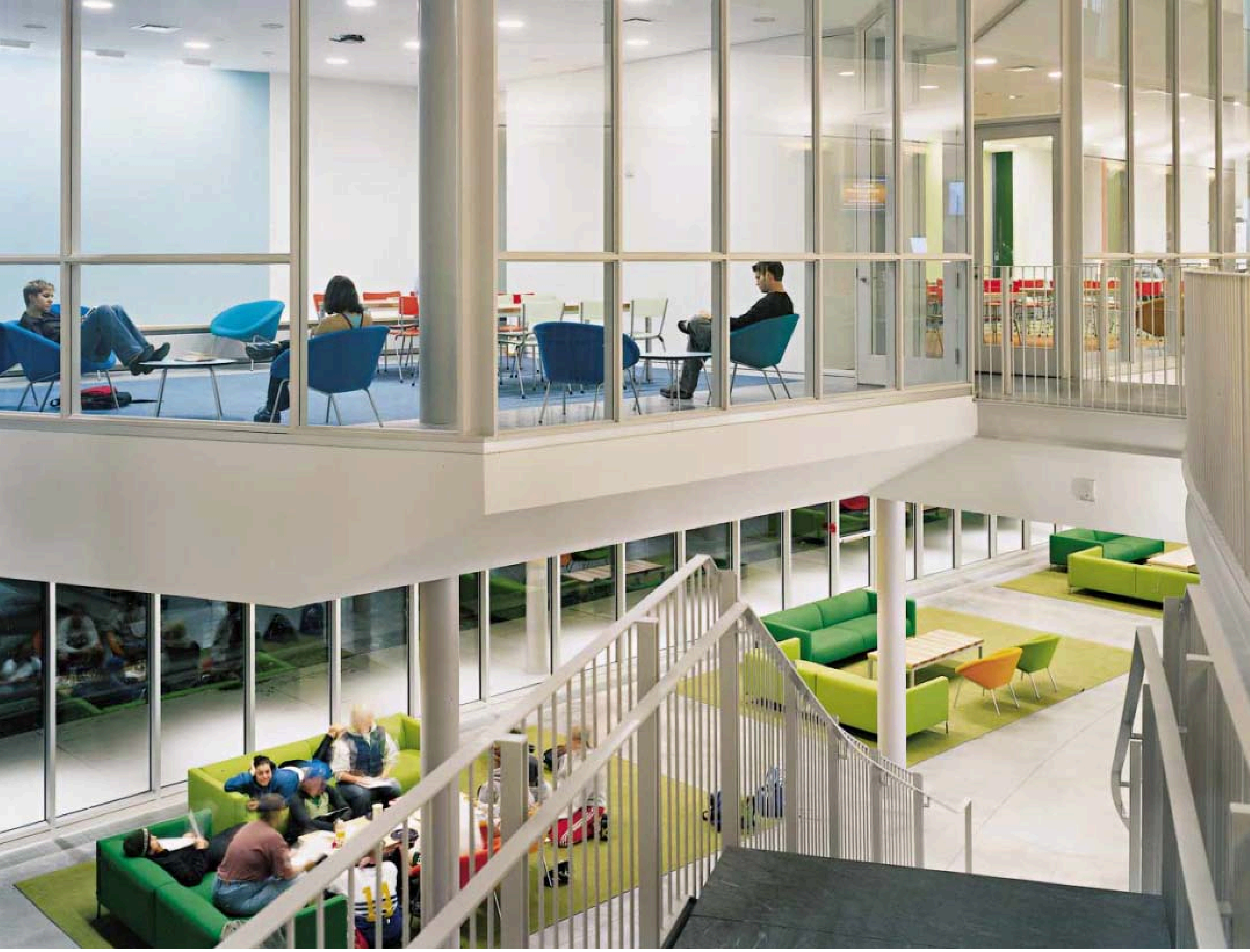
1. *Atrium*
2. *Main lounge*
3. *Meeting/lounge*
4. *Lounge*
5. *Office/lounge*
6. *Office*
7. *Cafeteria*
8. *Servery*
9. *Work space*
10. *Conference*
11. *Student organizations*
12. *Multipurpose*



MAIN LEVEL

In the past, social life at Smith centered around its 44 residential houses. But Ruth Simmons, president of the college from 1995 to 2000, saw the need for a gathering place for the entire school. As Weiss and Manfredi worked to get the right mix of uses, they also set about repairing damage done over the years to Frederick Law Olmsted's master plan of the campus. They created a grassy oval that helps pull together an ad hoc cluster of existing buildings and oriented the new campus center to this Olmstedian feature. But a power substation next door pushed the new building onto a narrow piece of land and squeezed its architectural form. When the client team expressed reservations about the initial scheme, Simmons said, "Let's relax the constraints, relax the budget, relax the setbacks from the substation," recalls Weiss. "It was a remarkable display of leadership." The architects developed a new design using a steel-and-concrete blast wall that allowed the building to get closer to the substation and expand in size and form. Both the client and the architects liked the new design much more, and Simmons—who subsequently became the president of Brown University—found the extra money to pay for it.

"We wanted a building that's full of light even during the winter," says Maureen Mahoney, dean of the college and the person at Smith in



charge of the campus center project. "And we needed a truly public space because the [residential] houses are just for the students who live there."

Weiss and Manfredi translated these requests into a winding, two-story-high atrium topped by a cable-stayed skylight that curves in two directions and expands in width from 12 feet at the north (facing the town's historic Elm Street) to 37 feet at the south (where it opens onto the college's new oval). To reduce the building's apparent mass, the architects pushed a floor with mailboxes, a store, and lounges below grade, but kept it daylight-filled by carving away the earth along its west edge. Weaving the building into the landscape, they incorporated a variety of terraces—in the space scooped out along the western facade, under the eaves just beyond the cafeteria, and on a porch in front of the main lounge.

To emphasize its social function, the architects designed the center's sinuous atrium as a covered street connecting college to town and providing a place where people would meet by accident or design. "The first model we built was a three-dimensional map of routes through the site," recalls Manfredi. "Our idea was to create a building that would slow people down and give them a place to pause and meet." Lounges, offices for student organizations, a sun-filled cafeteria, and a large multipurpose room (equipped to handle lectures and performances) stretch out on either side of the atrium. The lounges offer a range of active and quiet spaces, reflecting what Weiss calls a blurring of study and play among students today.

The architects wrapped the steel-frame structure with a double membrane of wood panels and battens, stained a warm white that matches Congregationalist churches in the area. When the local historical commission questioned the idea of a contemporary building, the architects pointed to old glass-and-metal greenhouses on campus, then showed images of their Women's Memorial at Arlington National Cemetery, which incorporates a Neoclassical hemicycle into a Modern addition using similar materials. "Much of our work is about reconciling the division of new and old," explains Weiss. At Smith, Weiss/Manfredi has collapsed time in a crystalline structure that wiggles gracefully on the border of past, present, and future. ■

Sources

Curtain wall: *Kawneer/Viracon*

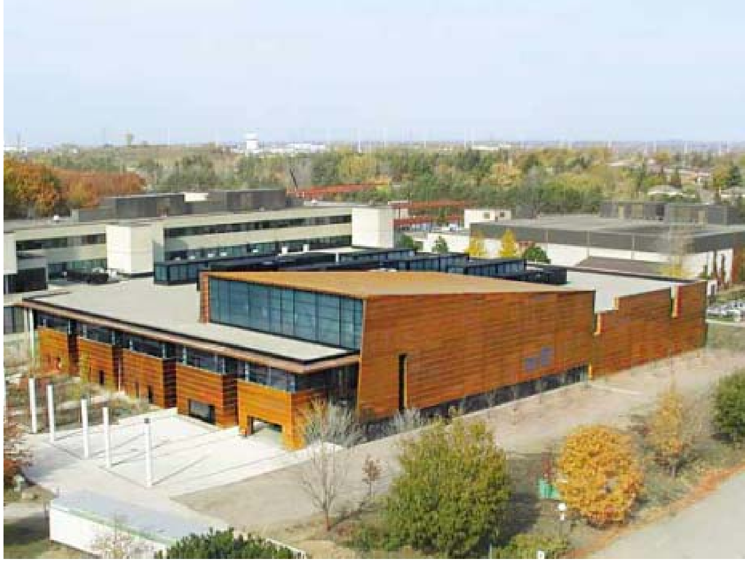
Skylight: *Custom by MAI/Architectural Skylight*

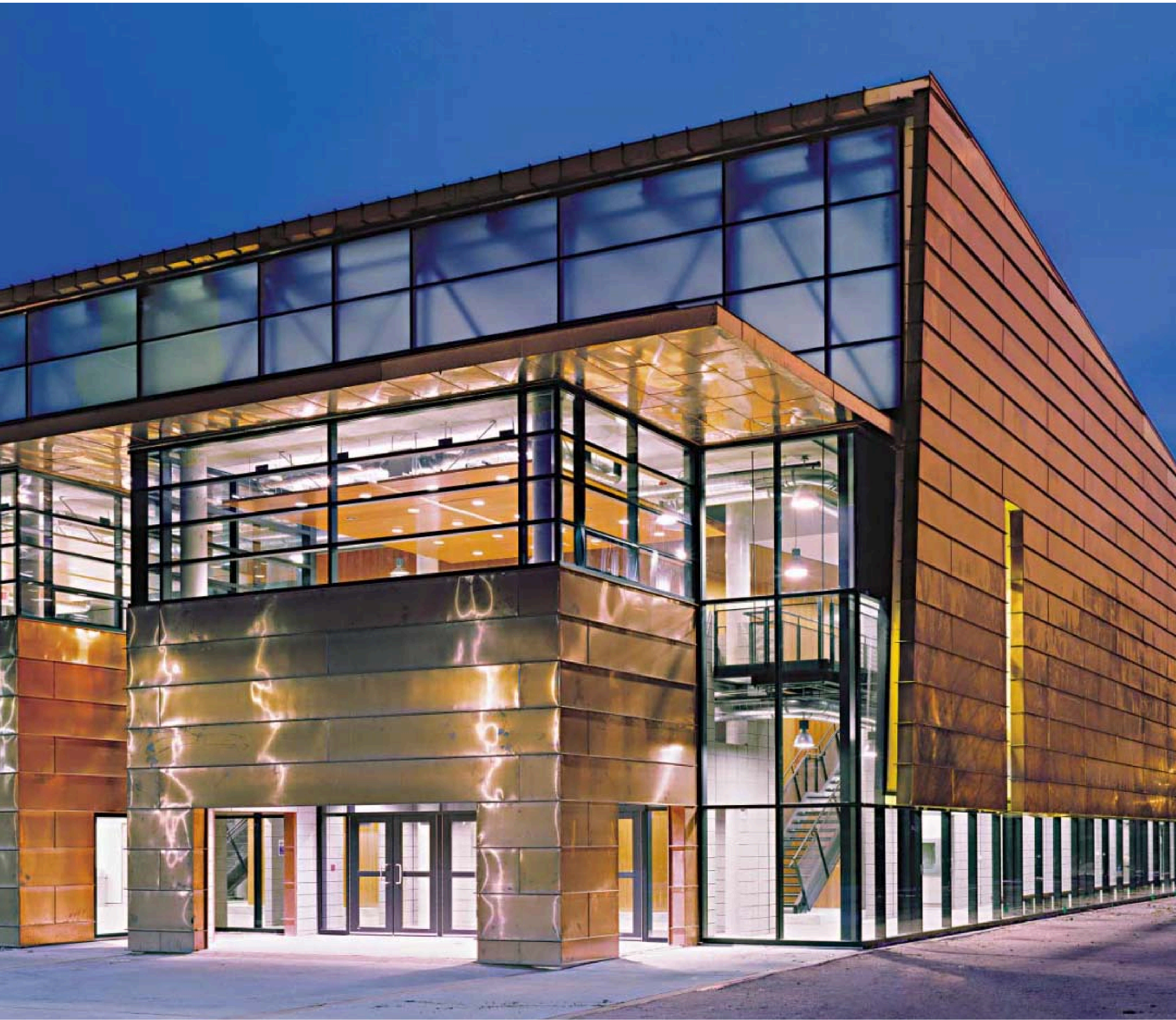
EPDM roofing: *Carlyle*

Café tables: *Weiss/Manfredi Architects*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

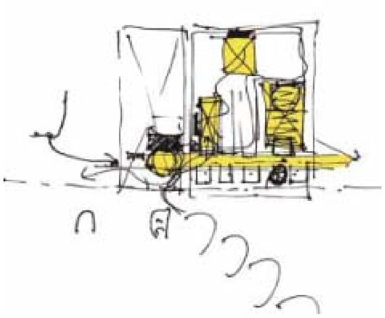
MacKay-Lyons began with sketches for the building volumes (opposite, top) and the master plan (opposite, bottom). Five modular projections (right and below) mark the entrance facade. Copper clads the exterior walls, including the east elevation (left) of the auditorium, and distinguishes the new structure from the 1971 addition to the west.

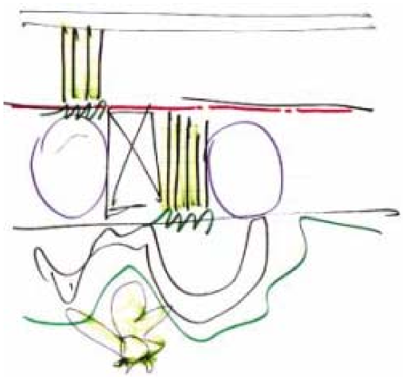




Brian MacKay-Lyons Architect's rationalist ACADEMIC RESOURCE CENTRE contrasts elegantly with a 1960s University of Toronto campus

By Terri Whitehead





Brian Mackay-Lyons's new Academic Resource Centre (ARC) at the University of Toronto's Scarborough campus is a functional and elegant addition sympathetic to John Andrews's celebrated building, which opened on the site in 1966. The large, linear, concrete megastructure, a heroically striking Brutalist form, still snakes across the landscape. Andrews, an Australian architect, intended this structure to be part of a nonrectilinear plan that could be easily expanded. However, his original scheme was never completed. Financial constraints prevented the campus from fulfilling its potential, and many of the key features, including a central library and arts wing, remained unfinished.

In recent years, the campus has outgrown its postwar incarnation as a small, nonresidential suburban college and has begun to flourish as an independent branch of the University of Toronto. With new government "Superbuild" funding, the school has received $150 million to enlarge and enhance the campus and is doing so with several major projects by an assortment of architectural firms. Brian MacKay-Lyons, a Halifax-based architect known for his cleanly articulated Faculty of Computer Science building at Dalhousie University in Halifax [RECORD, February 2001, page 102], convinced Scarborough that the new ARC building should be distinctly different from the powerful Andrews one. He developed a scheme in which the structure, which was to house the intellectual heart of the campus—the central library and resource center, a new lecture theater, and a small art gallery—would resemble a well-articulated industrial shed.

MacKay-Lyons, in a close collaboration with the Toronto firm of Rounthwaite, Dick & Hadley Architects, consulted with various groups to generate a flexible design that responded to the current requirement of the users while anticipating future needs. Designed on a rigid structural grid with a poured-in-place concrete frame, ARC reflects a clarity and articulation of expression typical of much of MacKay-Lyons's work. His fascination with function as well as industrial, vernacular, and shipbuilding techniques is much in evidence in this building's materials and formal solution. He organized the various programmatic elements for studying, writing, and meeting in a series of 25-foot-wide structural bays forming "boats" within the overall grid. Mackay-Lyons credits the plan and the limited palette of materials for being able to bring the project in at $13.8 million (Canadian), below the budget of $15.1 million. The most striking feature of the ARC is the standing-seam copper cladding, which wraps the structure's elevations and folds to cover the roof of the lecture theater. Chosen for its strong, warm color, copper should weather beautifully in the harsh Ontario climate. Inside, the exposed-concrete block used as infill walls recalls the rougher look of the adjoining Andrews building.

However, the interior benefits from the strategically placed cherry plywood tables, study carrels, and stairs, which give the vast library interior a warmth and sense of scale. At the same time, the library is the most dramatic space, framed as it is by the tall concrete perimeter columns inspired by those in the Great Mosque of Cordoba. Clipped onto the columns are steel catwalks, which, elevated far above the cathedral-like space, allow startling views across the library to a formal study area, a small group meeting space, and down to the work spaces and stacks below. The entire effect is further dramatized by the natural illumination pouring in from generous skylights, supplemented with industrial lighting. Nearby, the new, 500-seat lecture and performance theater features exposed steel trusses and a timber-clad stage area.

For an architect primarily known for his jewel-like, handcrafted homes dotting the rugged Nova Scotia coastline, MacKay-Lyons's ARC is a

Terri Whitehead is a designer and writer based in London, England. She writes about art and architecture for magazines such as Architects Journal, Blueprint, *and* Azure.

Project: *Academic Resource Centre (ARC), University of Toronto at Scarborough, Scarborough, Ontario, Canada*

Design architect: *Brian MacKay-Lyons Architect—Brian MacKay-Lyons, Hon. FAIA, principal in charge; Talbot Sweetapple, project architect*

Prime consultant: *Rounthwaite, Dick & Hadley Architects—Rob Boyko, partner in charge; David Premi, project architect*

Project team (for both firms): *Melanie Hayne, Momin Hoq, Kevin McCluskey, Carlos Tavares, Dan Herljevic, Justin Bennett, Diana Carl*

PHOTOGRAPHY: © STEVEN EVANS

well-timed experiment that builds on his only other large completed project, the Dalhousie University building, as well as his houses. All obey a rigid structural logic and use well-chosen materials. The campus additions respond to the larger site and public realm. "I see myself as a public-building architect," MacKay-Lyons says. "The houses have been a testing ground, and the ARC is an extension of them." Conceptually and formally, his Kutcher House resembles the Scarborough center. It, too, has thin metal cladding, which wraps over the roof and down the walls. Both also share an internal logic that is expressed through defining the systems of the structure as separate parts of a machine. The Dalhousie building bows more strictly to this logic, using a tartan-gridlike plan of served and servant spaces, whereas the ARC employs the language with more flair and leniency.

Larry Richards, dean of the School of Architecture at the University of Toronto, sees the ARC as having a "material toughness" that contrasts successfully with the Andrews building. Indeed, MacKay-Lyons's ARC strikes a perfect note at the Scarborough campus. It both complements the bold '60s surroundings and reinvents a Modernist vocabulary with a seemingly less prescriptive approach. When viewed next to the dominating Andrews building, the copper-sheathed ARC marks a new age for Scarborough, one that tempers intellectual and physical growth with civilized expansion. ■

Sources

Metal/glass curtain wall: *Alumicor*

Hardware: *Upper Canada Specialty Hardware*

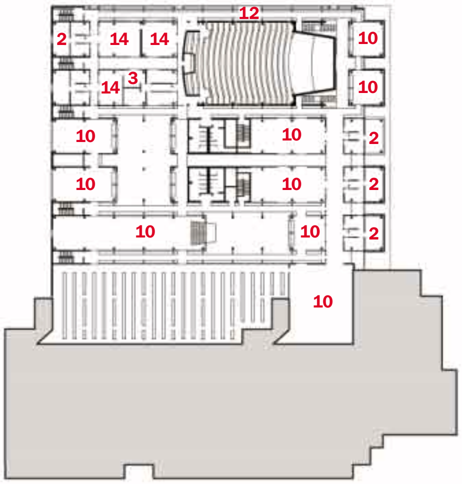
Acoustical ceilings: *Canadian Gypsum Company*

Suspension grid: *Canadian Gypsum Company*

Cabinetwork and custom woodwork: *Amati/Cale Architectural Woodwork*

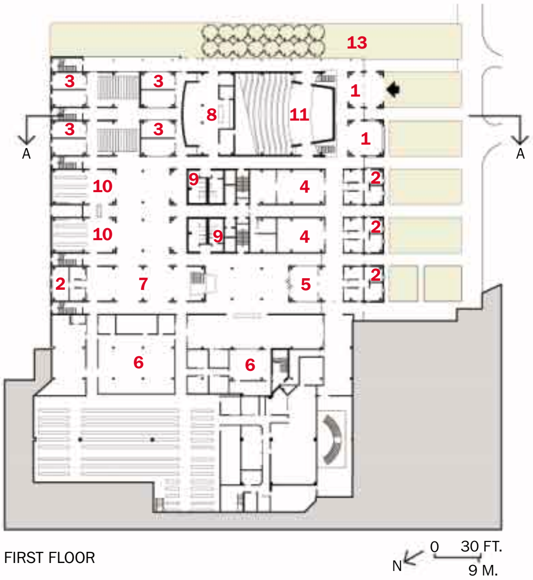
Carpeting: *Crossley*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

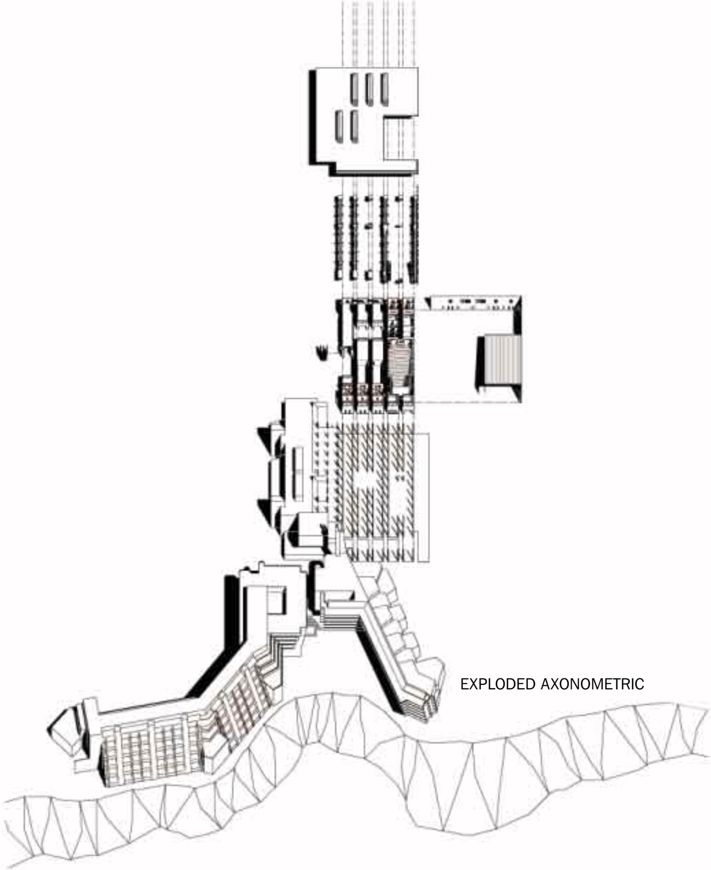


SECOND FLOOR

1. **Lobby**
2. *Offices*
3. *Group study*
4. *Writing center*
5. *Welcome area*
6. *Library services*
7. *Special collections*
8. *Events room*
9. *Bathrooms*
10. *Study*
11. *Lecture theater*
12. *Catwalk*
13. *Garden*
14. *Humanities lab*



FIRST FLOOR



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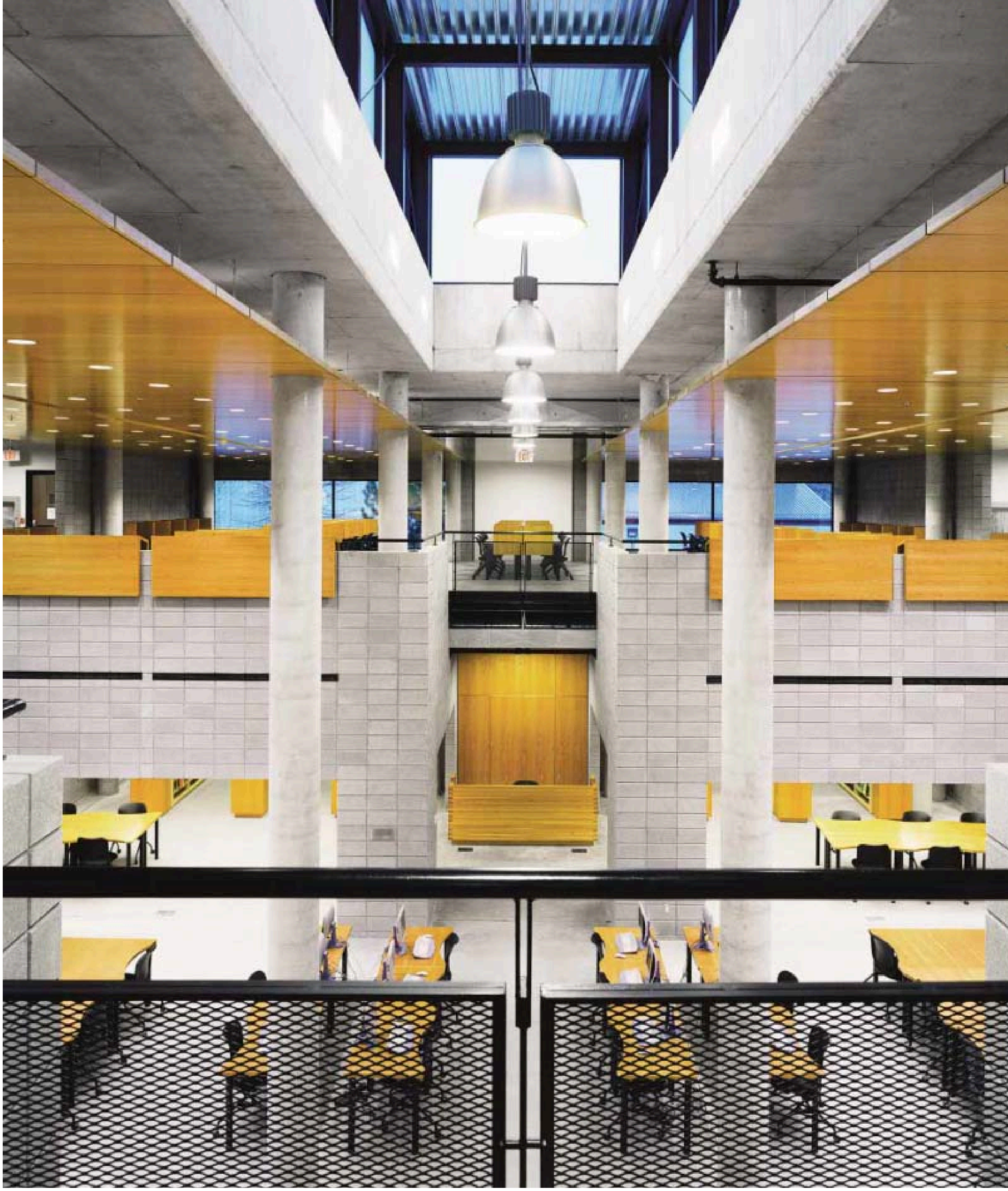
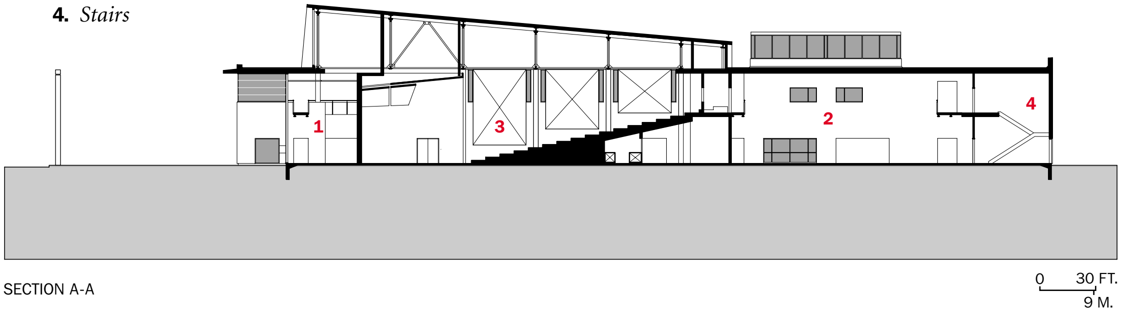


Steel catwalks form an observation deck looking across the library and into the workstations below (right). Cherry plywood in the tables, study carrels, dropped ceiling plane, and stairs brings a warmth and human scale into the cathedral-like library's various spaces (opposite and bottom right) edged with concrete-block walls.

1. *Lobby*
2. *Circulation*
3. *Lecture theater*
4. *Stairs*



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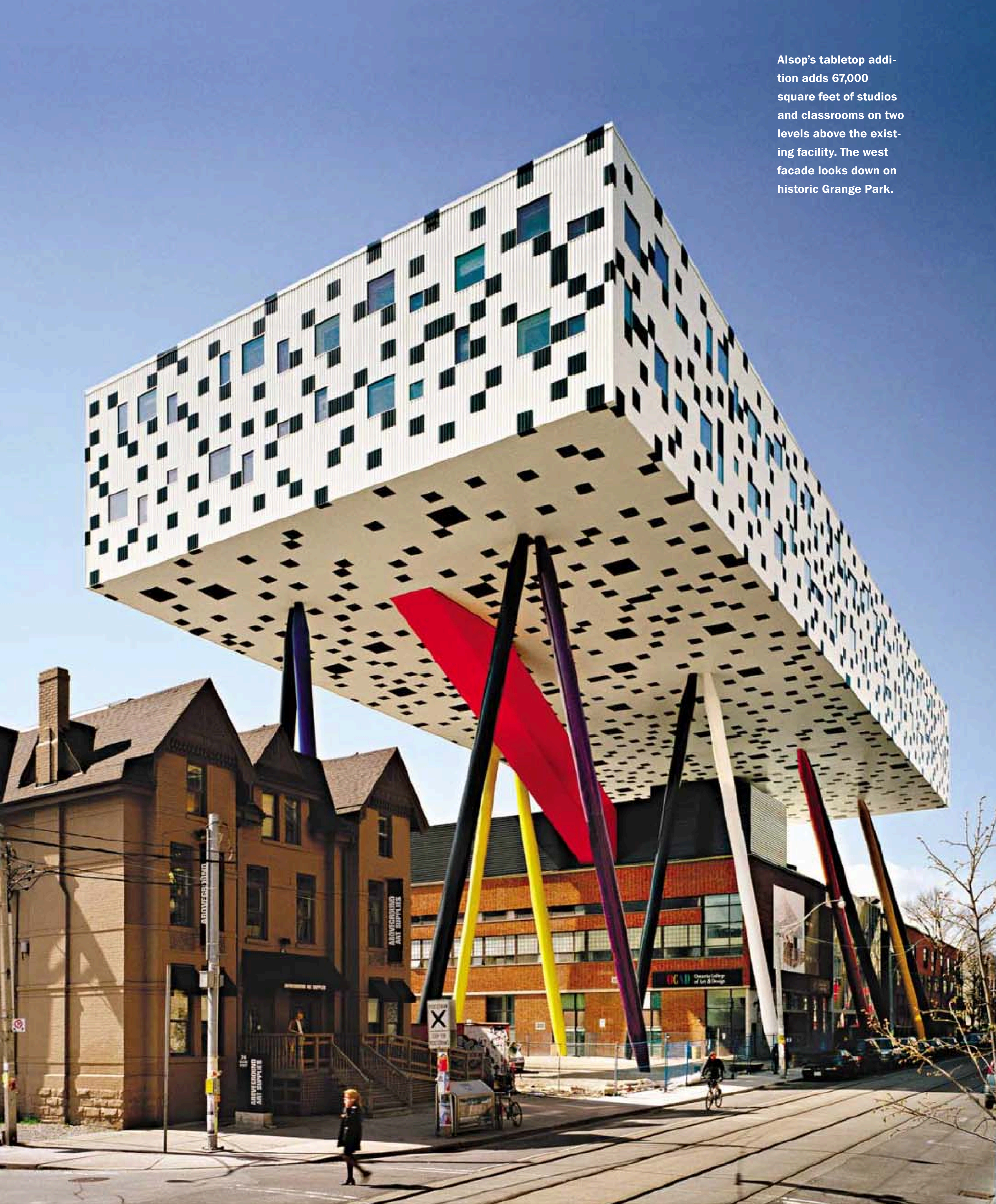
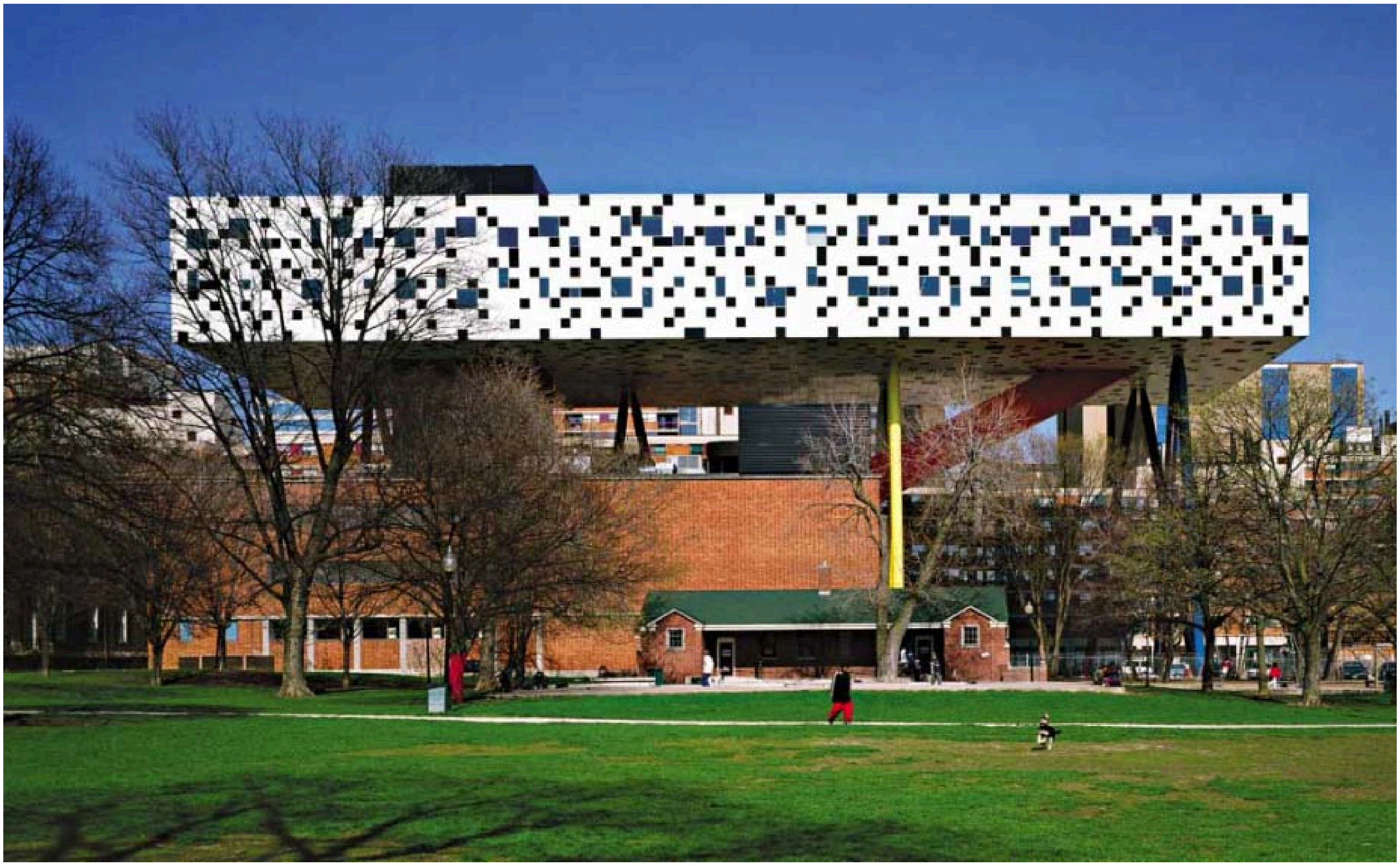


Alsop's tabletop addition adds 67,000 square feet of studios and classrooms on two levels above the existing facility. The west facade looks down on historic Grange Park.

ABOVEGROUND ART SUPPLIES
OCAD Ontario College of Art & Design

With his first commission in North America, Will **Alsop** boldly takes to the air at Ontario College of Art and Design's **SHARP CENTRE** in Toronto



PHOTOGRAPHY: © RICHARD JOHNSON/INTERIOR IMAGES

By Sara Hart

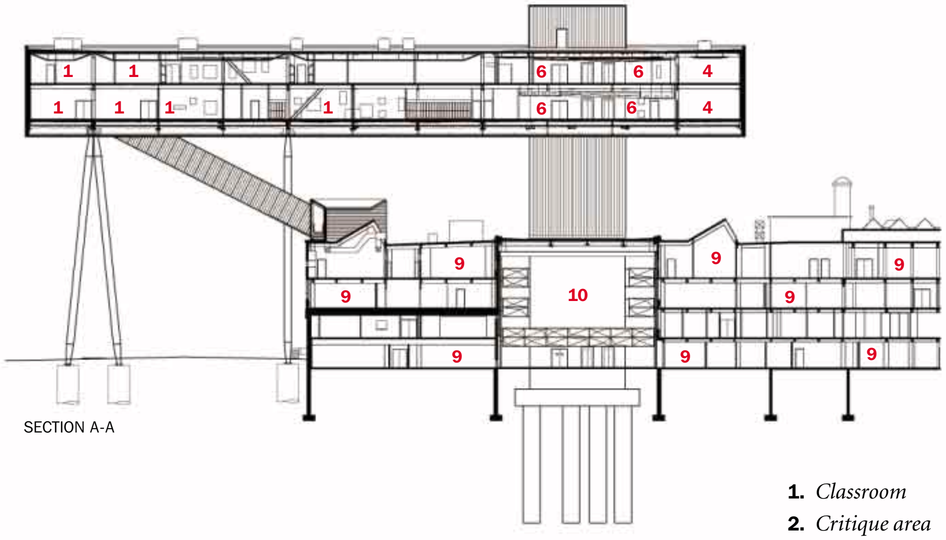
Both its form and imagery are stunning, and to some, startling: Toronto's new black-and-white-speckled Sharp Centre, the wonderfully chimerical addition to the Ontario College of Art and Design (OCAD)—the largest and oldest institution of its kind in Canada. Designed by London-based Alsop Architects in a joint venture with Toronto-based Robbie/Young + Wright, the structure is aptly described as a "tabletop," perching as it does on 12 steel legs 85 feet above a low-rise, light-commercial stretch west of the city's central business district, a bland urban context. Although it begs for explanation, Alsop asks that the project not be overanalyzed, and he eschews the temptation to assign theoretical motives to it with a good-natured, not-quite-dismissive, "What you see is what you get." In the case of the Sharp Centre, there's a lot to see.

For quite some time, the school lacked quality studio, gallery, and classroom spaces and the funds to rectify the situation. Then a grant from Canada's $233 million SuperBuild Growth Fund allowed OCAD to mount a capital campaign to raise money to renovate the existing facilities and build the Sharp Centre. The administration and trustees chose a bold strategy, one that would give a prestigious art school the presence it deserves. By selecting provocateur Will Alsop, OCAD got exactly what it bargained for.

Structurally, the 100-by-280-foot box is a system of linked transverse and longitudinal steel trusses. The system is braced horizon-

Project: *Sharp Centre at the Ontario College of Art and Design, Toronto*
Architects: *Alsop Architects in a joint venture with Robbie/Young + Wright*
Engineers: *Carruthers & Wallace (structural); MCW (m/e/p)*

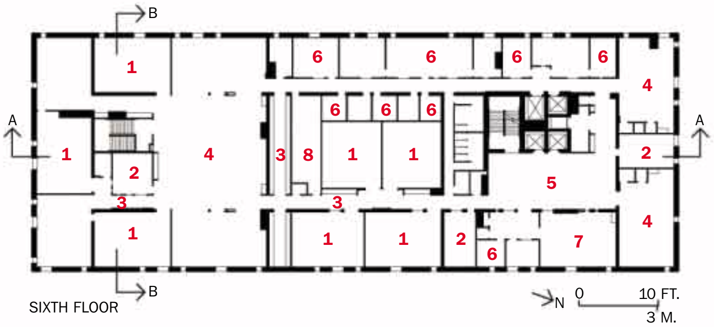
Consultants: *Stephen Pollard (lighting); YWLA (landscape design); Sterling Finlayson (urban design); Shaheen & Peaker (geotechnical consultants)*
Contractor: *PCL Constructors*



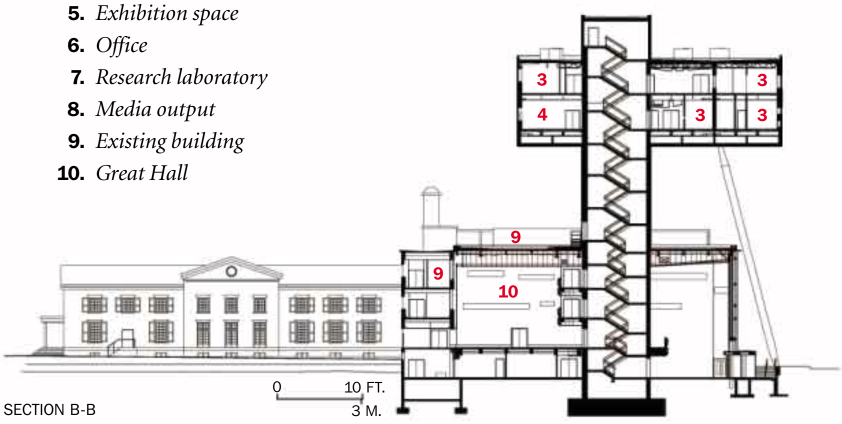
SECTION A-A

The tabletop scheme is new construction, but the program called for a new, three-story Great Hall, which the architects carved out of the existing facility (section at left). The interiors (opposite), while bright and lively, are "rough and tough" spaces for work in all kinds of artistic media.

1. *Classroom*
2. *Critique area*
3. *Corridor*
4. *Studio*
5. *Exhibition space*
6. *Office*
7. *Research laboratory*
8. *Media output*
9. *Existing building*
10. *Great Hall*



SIXTH FLOOR



SECTION B-B

tally at the floor levels to provide horizontal rigidity. The tapered steel columns are embedded in caissons that extend 60 feet into bedrock. It's sturdy.

The tabletop is clad in white aluminum pixelated by a random pattern of black squares and rectangles. Deep windows of varying sizes are punched into the envelope at different heights. This design move obscures the overall scale by hiding the floor plates, resulting in a structure that reads as an objet d'art, hovering above the urban fray on splayed legs. Alsop's designs are inspired by personal responses to human behavior, intuitive rather than rationalized. Deep windows allow students to occupy the sills and daydream, since Alsop believes that creativity is fed by fantasy. The window strategy is also his commentary on "the legacy of functionalism [that] dictates that one must be doing something at all times."

"WHAT YOU SEE IS WHAT YOU GET"— AND IN THE CASE OF THE SHARP CENTRE, THERE'S A LOT TO SEE.

The urban impact of Alsop's efforts, however, is not fantasy but a dream come true for neighborhood residents. The west facade of the center looks down on historic Grange Park. Previously, OCAD parking blocked access to the park from the east, and the Art Gallery of Ontario hems it in on the north. Due to this relative isolation, it has not been much of a destination. Happily, Alsop's airborne scheme creates a gateway to the park through which light, air, and people will flow in both directions. This is architecture with collateral benefits—a status symbol that belongs to both the school and the community.

The OCAD addition and renovation does its part to enliven the city symbolically. Toronto is a sophisticated, international city that is, in some respects, temporarily down at the heels. Nowhere is this more glaring than in its cultural institutions, many of which have outgrown their facilities and are precariously serviced by antiquated and inadequate infrastructures.

As it did with the Sharp Centre, the Canadian government is coming to the rescue, or at least jump-starting some major fund-raising efforts with SuperBuild monies. Although thinly spread over the next decade, projects planned for Toronto's future will display the talents of Daniel Libeskind, Norman Foster, and native son Frank Gehry, along with locals Kuwabara Payne McKenna Blumberg and Diamond + Schmitt. ■

Sources

Curtain wall: *Global Architectural Metals*

Corrugated-aluminum siding: *Flynn Canada*

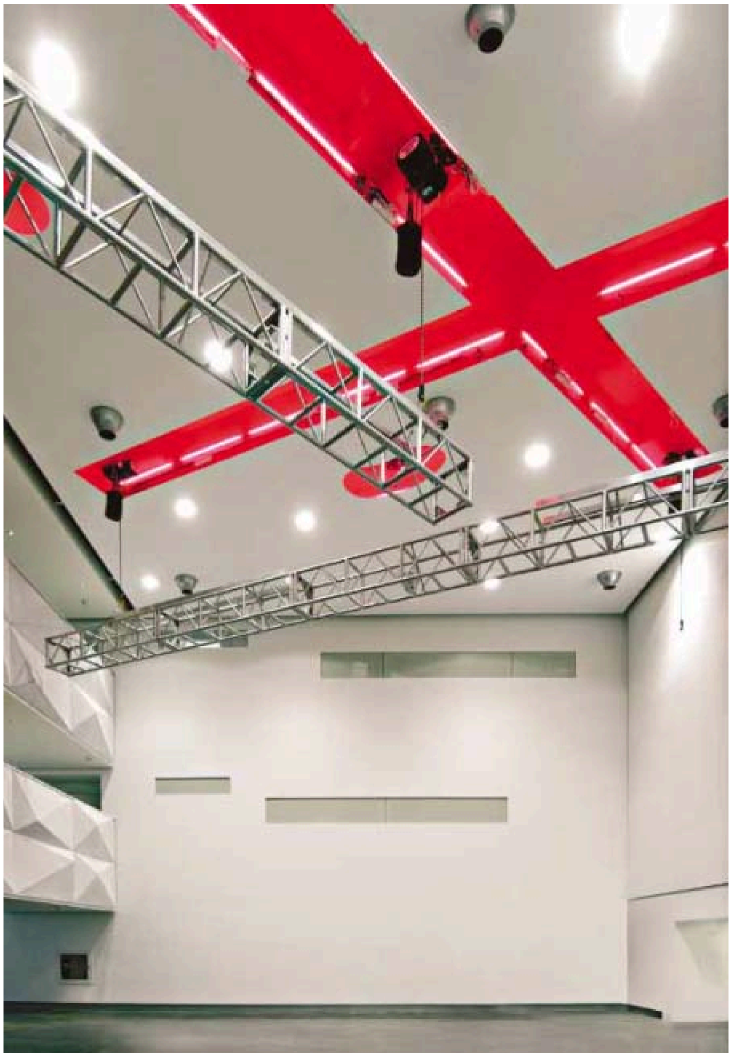
Glazing: *Prelco (laminated glazing); Vanceva (colored film)*

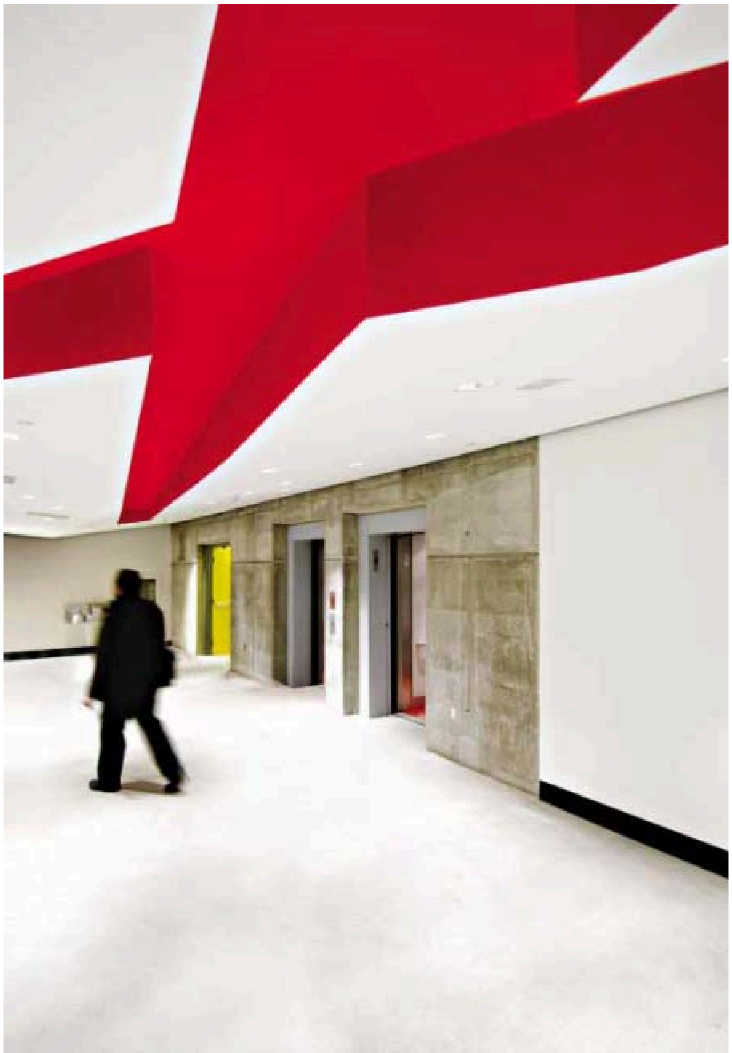
Structural steel: *Walters*

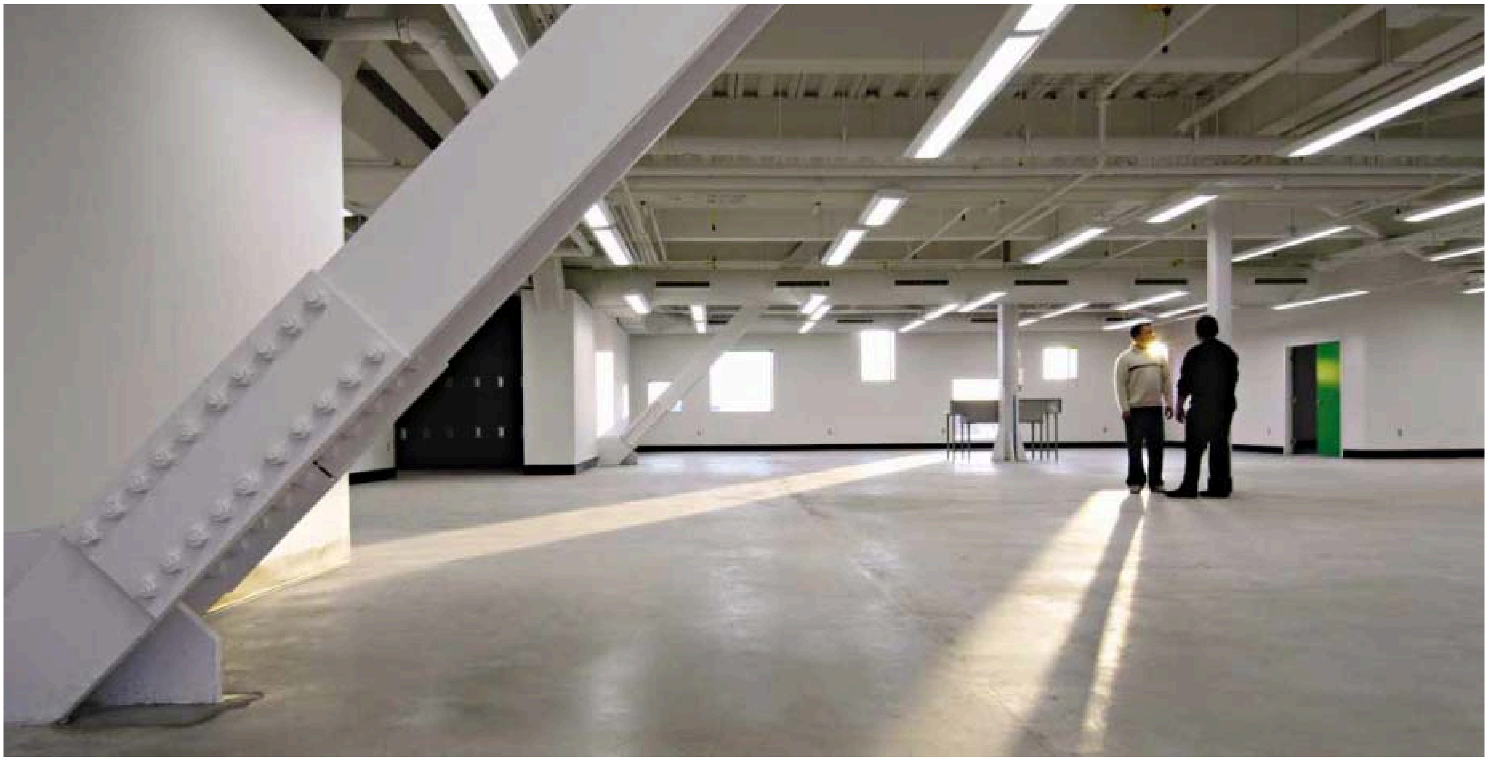
Special surfacing: *3M (perforated window film)*

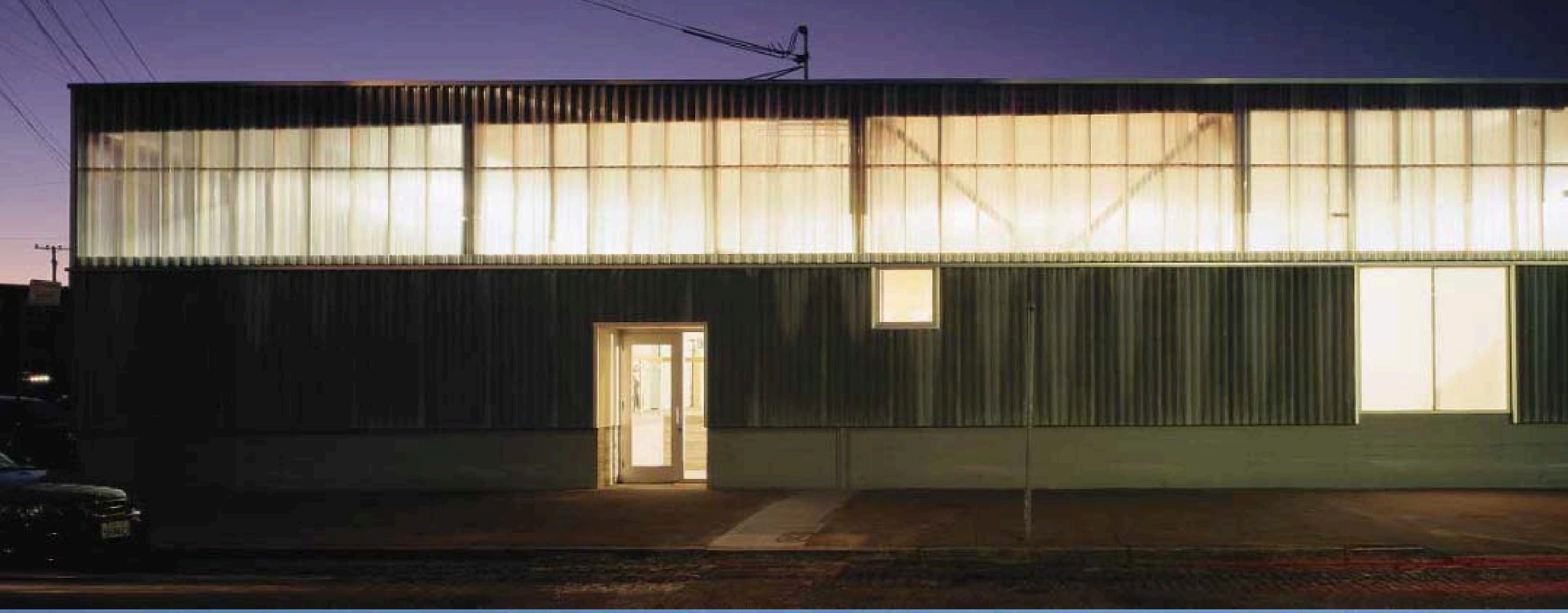
Interior panels: *Decoustics (perforated vinyl acoustical panels)*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

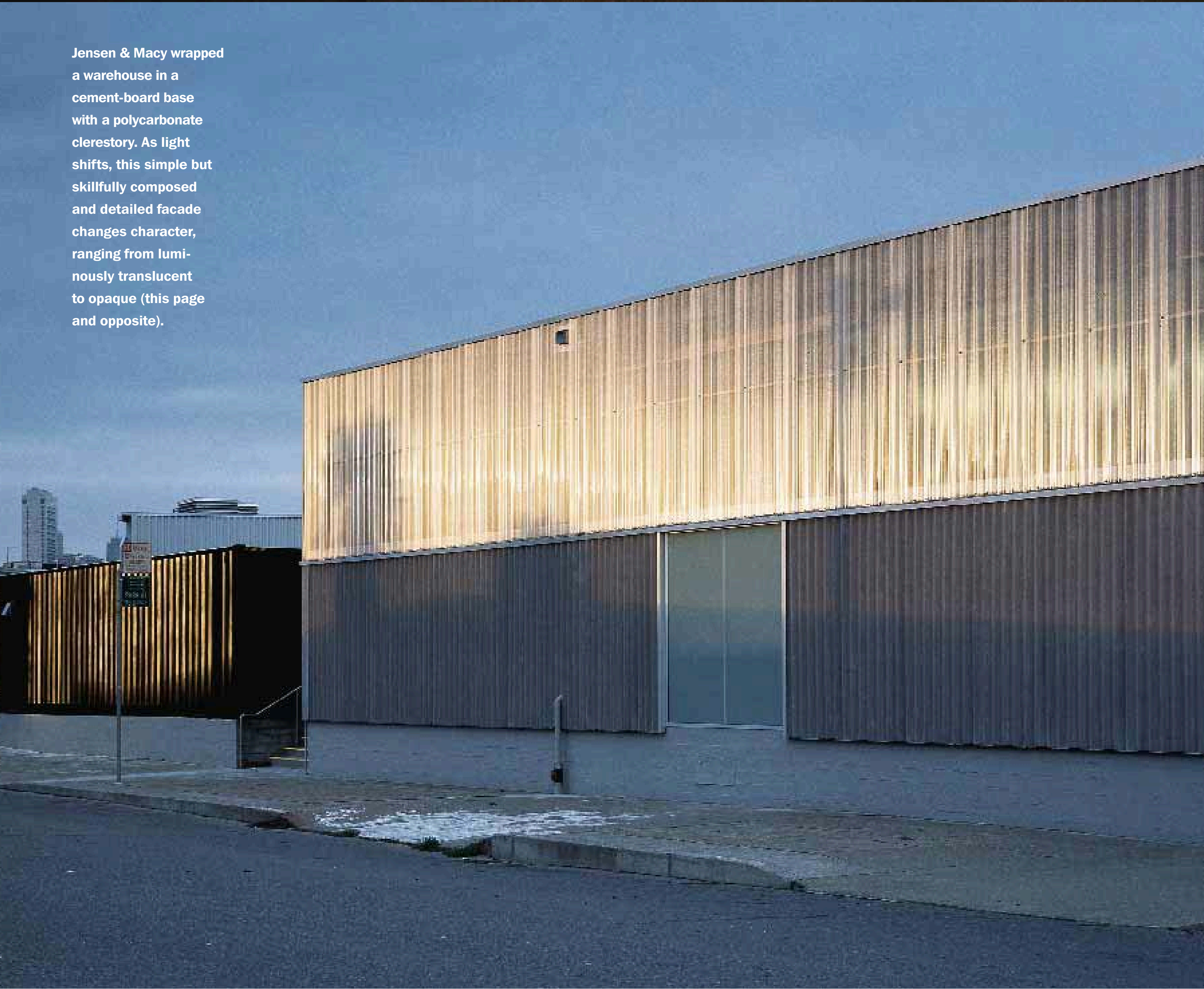




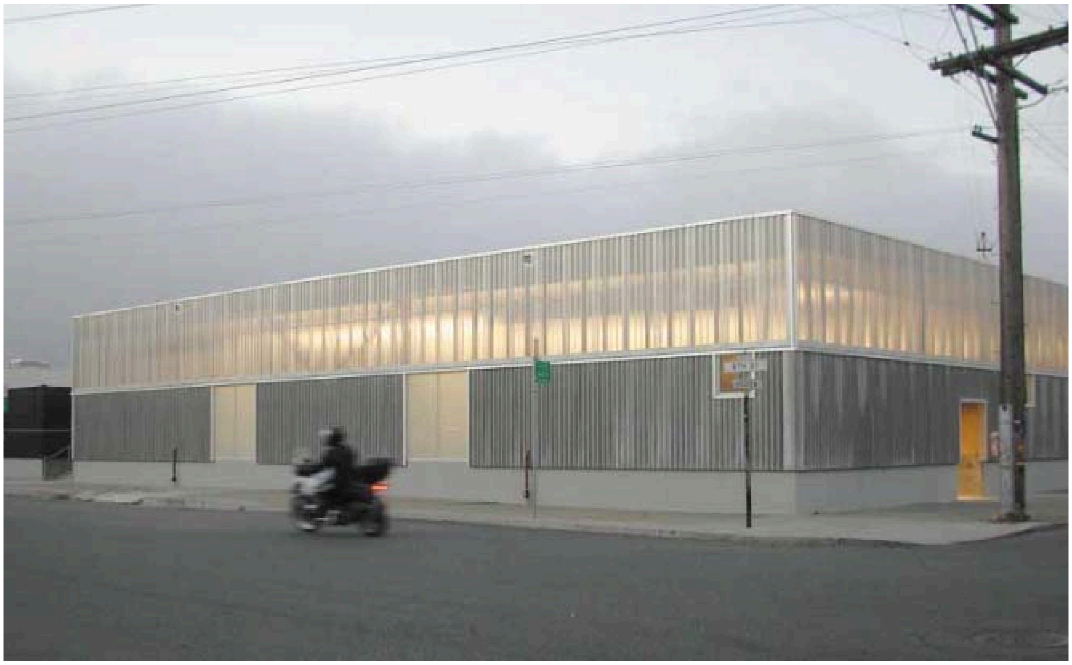




Jensen & Macy wrapped a warehouse in a cement-board base with a polycarbonate clerestory. As light shifts, this simple but skillfully composed and detailed facade changes character, ranging from luminously translucent to opaque (this page and opposite).



Jensen & Macy turns an existing warehouse into a glowing lantern, artfully transforming the ordinary at the CCA GRADUATE CENTER



PHOTOGRAPHY: © RICHARD BARNES, EXCEPT AS NOTED; COURTESY JENSEN & MACY (THIS PAGE)

By John A. Loomis

Earth, crumpled newspapers, concrete, sticks, and other everyday fare comprised the palette of the *materia povera* ("poor material") that shaped the open-ended experimentation of so-called *arte povera* ("poor art") by artists emerging from the politicized urban culture of 1960s Italy. The results were anything but poor.

Many miles and decades away, *materia povera* was very much the inspiration for Jensen & Macy Architects' recently completed CCA Graduate Center in a postindustrial San Francisco neighborhood on the campus of the California College of the Arts (CCA). Faced with a burgeoning, multidisciplinary graduate arts program and the financial challenges of a nonprofit institution in a post-dot-com economy, CCA signed a 10-year lease for a dilapidated, single-story, 10,000-square-foot warehouse on a visually prominent city corner across the street from its main facility. The architects had to carve out daylit studios while providing seismic and ADA-accessibility upgrades—all within the confines of a minimal budget and an aggressive schedule set by a fall term just eight months away. By artfully wrapping the existing frame and interior spaces in inexpensive, common materials, Jensen & Macy achieved a work of architecture rich in subtlety and restraint, satisfying both urban and human scales. The firm also managed to deliver the project on time and on budget, for a jaw-dropping $71 per square foot.

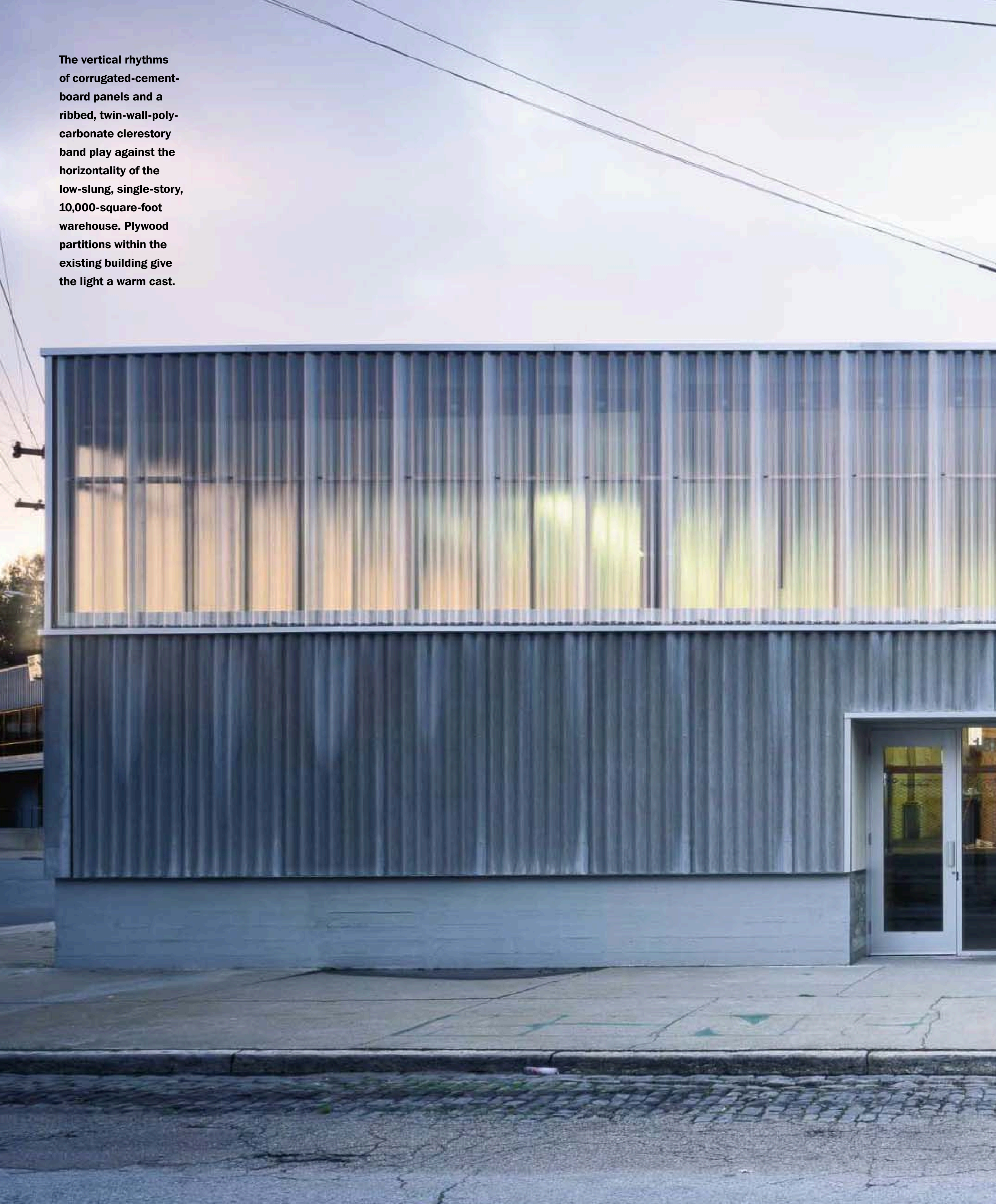
The signature move was the skin. The architects covered the existing wood frame at its base in corrugated-cement-board panels, punctuated by occasional openings. Corrugated, twin-wall polycarbonate sheathes the top, producing a nearly continuous, rhythmic texture of vertical ribs. The polycarbonate effectively creates a clerestory band, diffusing sunlight deep into the studio interiors by day and producing a softly glowing beacon at night. Changing with the light, this upper register displays a broad range of qualities, varying from opacity to mirrorlike reflectivity to translucency to luminescence—all from a simple, off-the-rack building material.

Inside, Jensen & Macy added a layer of raw, construction-grade plywood at the base, with the lumber encasing 32 individual studios, each a 10-by-20-foot volume open at the top. Every one of these interiors-within-the-interior becomes transformed into a highly individualized space according to the needs, interests, and passions of its resident artist—only to morph again when that artist moves on and another comes to occupy the cell. This evolution generates a delightful experiential contradiction, playing the utilitarian repetition of the shells against the spontaneous and ephemeral individuality of the studios within them.

In addition to the studios, the new graduate center includes a student lounge at the rear on the existing, refinished concrete slab, and at the front, a wheelchair-accessible entry ramp, bordered by soccer netting instead

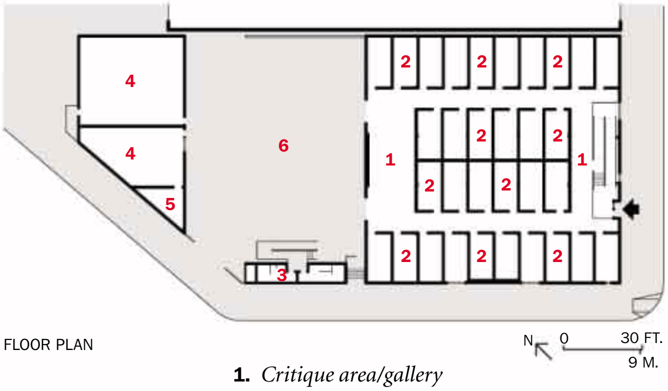
John A. Loomis, author of Revolution of Forms: Cuba's Forgotten Art Schools *(Princeton Architectural Press, 1999), teaches architecture at the University of San Francisco and, as a journalist, writes about architecture and urban issues.*

Project: *CCA Graduate Center, San Francisco*
Architect: *Jensen & Macy Architects—Mark Jensen, Mark Macy, principals; Frank Merritt, project architect; Dean Orr, Chia-Yu Yen, project team*
Engineers: *Jeffrey Weber and Associates (structural); Guttmann & Blaevoet (mechanical)*
General contractor: *Oliver & Company*



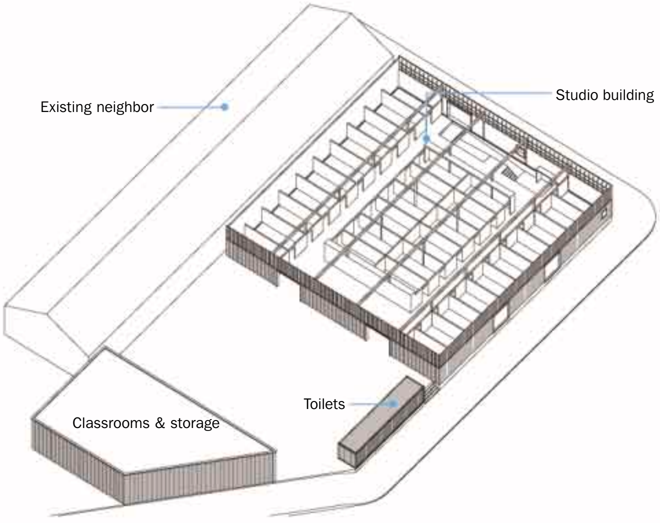
The vertical rhythms of corrugated-cement-board panels and a ribbed, twin-wall-polycarbonate clerestory band play against the horizontality of the low-slung, single-story, 10,000-square-foot warehouse. Plywood partitions within the existing building give the light a warm cast.

The plywood studios are open at the top, letting in ample sunlight (left and opposite, top). Throughout the interior, finishes remain intentionally raw (bottom left). A prefab restroom unit forms a permanent outhouse (opposite, bottom) for the studios.

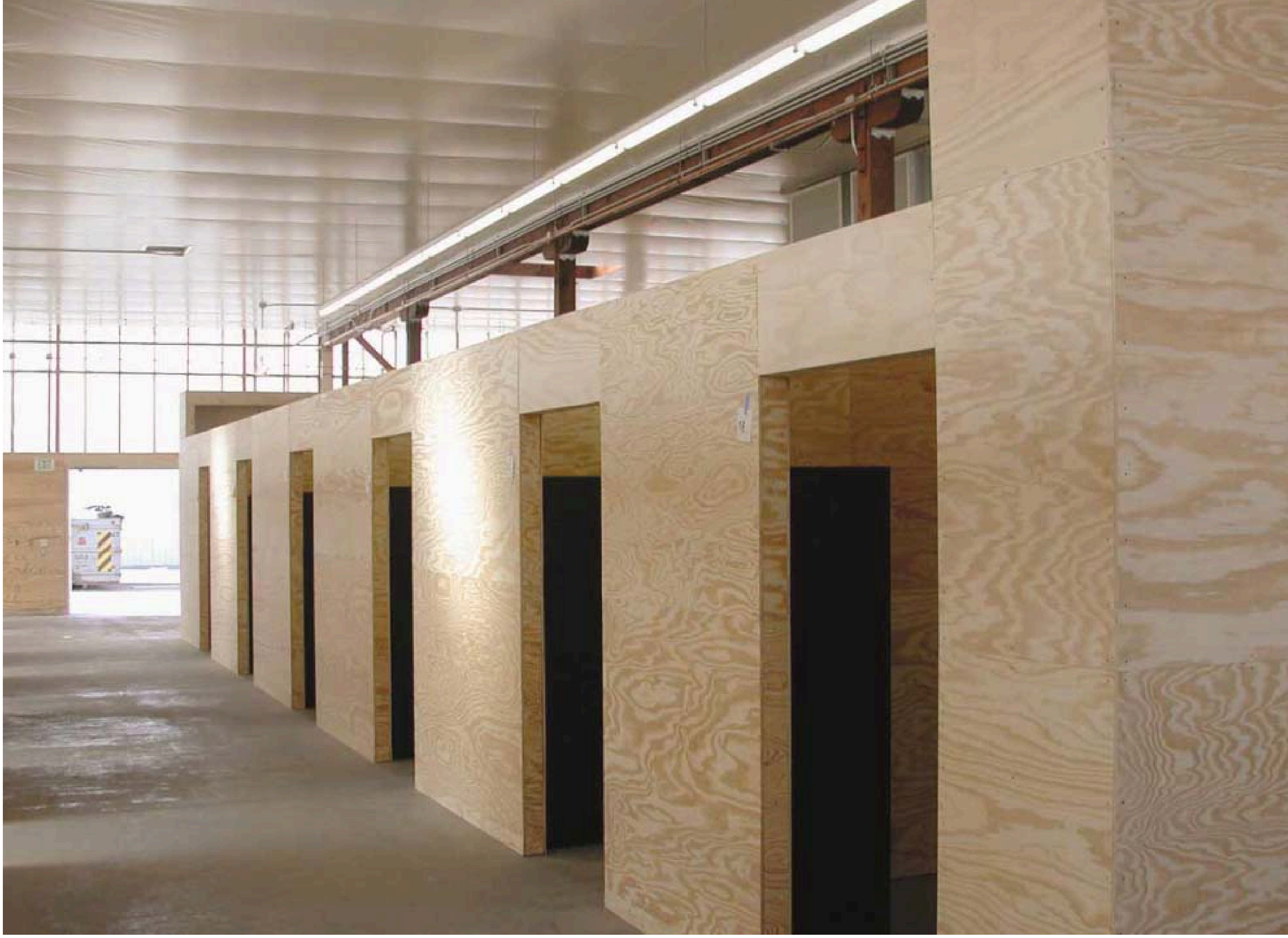

4
4
5
6
1
1
2
3
N
0
30 FT.
9 M.

FLOOR PLAN

1. *Critique area/gallery*
2. *Typical studio*
3. *Restroom container*
4. *Classroom*
5. *Storage*
6. *Courtyard*


Existing neighbor
Studio building
Toilets
Classrooms & storage

AXONOMETRIC



of conventional guardrails—another Jensen & Macy cost-saving innovation.

An open court, somewhat smaller than the graduate center interior, flanks one side of the building, providing flexible outdoor work and clean-up space. Across the courtyard stands another warehouse also converted by Jensen & Macy, which now houses two large classrooms and storage. A steel shipping container, fitted with prefabricated restrooms, encloses the courtyard along its street edge and compensates for the absence of toilet facilities in the studio building, where the existing, industrial-grade concrete slab made new plumbing prohibitively expensive. Creatively and economically devising an out-of-the-box solution, the architects literally furnished "in-the-box" restrooms. By researching the options, they discovered that one plumbing company had recently introduced a "drop-in," black-steel shipping container housing prefabricated restrooms. In the wake of 9/11, the manufacturer had developed this product to supply sites of terrorist acts with quickly installed emergency units. Part of a growing trend, this ominous object at CCA represents a civilian spin-off from homeland security measures. The big, black-steel box actually looks very FBI. And something about its dark irony as a cultural artifact makes it a hit with both students and faculty.

The demise of dot-com largesse has clearly tightened the belts of colleges and universities throughout the Bay Area. And the effect of this on capital improvement investments and building programs all too often translates into a decline in design quality, even at some of the most prestigious institutions. The increasingly frequent impulse to "fire the architect and go design-build" often yields aesthetics worthy of Silicon Valley industrial parks. But here, Jensen & Macy, along with a client committed to architectural excellence, transcended a stringent budget. By carefully selecting and artistically deploying inexpensive materials, the team achieved uncompromised architectural quality. Just as *arte povera* ennobled the ordinary, the CCA Graduate Center honors the art of its students with its quiet celebration of the everyday. ■

Sources

Metal siding: *AEP Span*

Storefront windows: *Southwest Aluminum*

Polycarbonate panels: *ArcoPlus*

Prefabricated restroom: *Kohler Mobile Plumbing Systems*

Lighting: *Wellmade (fluorescent strip fixtures); RAB (quartz halogen pendant floods)*

For more information on this project, go to Projects at **www.architecturalrecord.com**.

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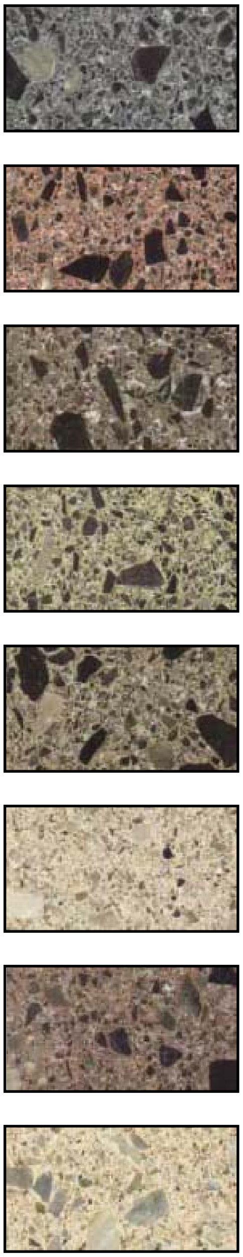

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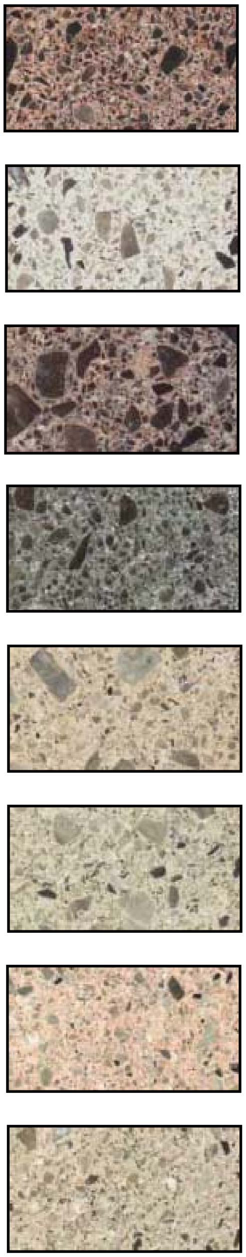
-Craig Kellogg
New York Times



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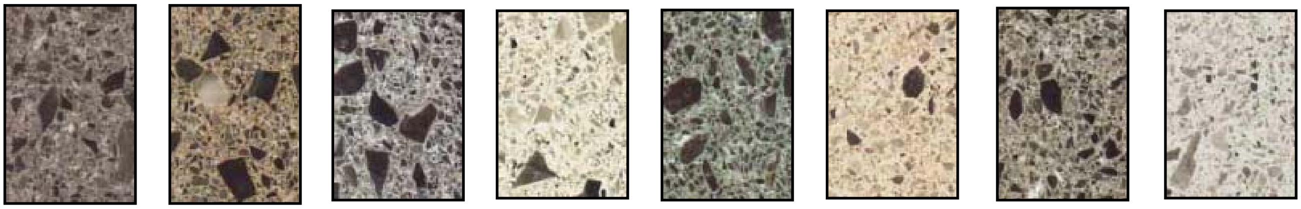

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HOTELS

Sleeping in Style

NEW HIGH-DESIGN HOTELS KEEP OPENING UP HERE AND ABROAD, YET SOME ARCHITECTS STILL CAN'T FIND A PLACE TO STAY. THIS AND OTHER ISSUES WARRANT A CLOSER LOOK.

By Suzanne Stephens

1.

Chicago, Illinois

Lucien Legrange, AIA, and Yabu Pushelberg have renovated and added onto a 1920s tower for a hotel with high drama and pulsating energy.

2.

Scottsdale, Arizona

Deborah Berke & Partners brings splashes of color, spacious proportions, clean lines, and crisp planes to a desert caravansary.

3.

Milan, Italy

Antonio Citterio and Partners adds dash and a svelte assuredness to an urban enclave attracting people from the world of fashion.

For more information on these projects, go to Projects at **www.architecturalrecord.com**.

PHOTOGRAPHY: © ADRIAN WILSON (1); ERIC LAIGNEL (2); LEO TORRI (3)

If you go by travel publications, it would seem that smartly done-up hotels featuring high-quality architecture litter the landscape. However, if you ask leading architects where they stay when they travel, they will often admit that finding hotels they can check into without leaving their design scruples at the door is still rare, especially in the United States. And generally, such establishments deliberately appeal to an affluent 20- and 30-something set. Architects and architecture aficionados on the far side of 40 may find themselves feeling as though they have arrived at a very stylish sandbox.

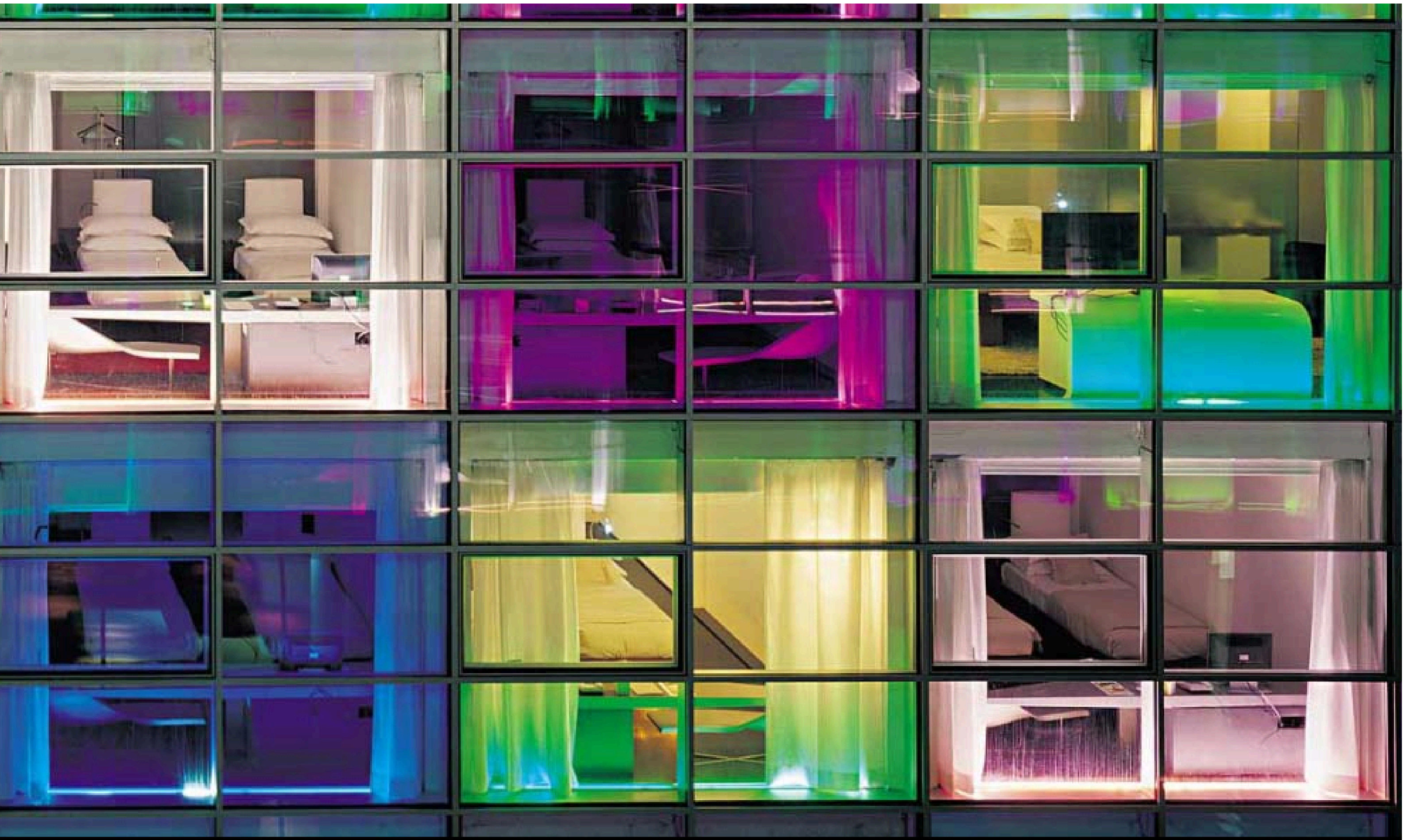
Granted, it is not like the 1950s and the '60s, when numbingly banal storage bins built by hotel chains ruled the world, with Morris Lapidus's souped-up Miami Modern offering the only antidote. Nor is today's situation similar to the 1970s, when bed-and-breakfast inns challenged the norm with antique-filled, quaintly renovated Victorian and Federal-style houses. The following decade brought "boutique hotels," such as the comfortably traditional, small-scale ones started by Kimpton Hotel and Restaurant Group in Seattle and San Francisco before spreading nationwide. Actually, ex-night-club entrepreneur Ian Schrager still deserves credit for radically changing the mind-set: He introduced sleek, ultra-Modern boutique hotels in the late '80s and '90s, with Andrée Putman and Philippe Starck's big-idea/tiny-guest-room approach for the design-minded. If interior designers were the force behind the push more than architects themselves, at least there was hope that innovative architects would be consulted at some point, after the public (and the hotel industry) had warmed up to the new look.

By the '90s, the boutique-hotel-with-an-edge boom had spurred new chains (such as Starwood's W hotels) to attempt to siphon off some of the business. And more recently, the established chains have been creating special categories of hotels to slake the growing design thirst: witness Le Meridien's Art + Tech group, which just opened the Le Meridien Minneapolis, with neo-'60s-Modern interiors by the Toronto design firm Yabu Pushelberg. (Besides the projects covered on these pages, this and several others cited here can be found on our Web site, www.architecturalrecord.com.) And the Hard Rock hotel chain has enlisted Yabu Pushelberg to work with architect Lucien Legrange, AIA, in making over a late-1920s Chicago office tower designed by Daniel Burnham's successor office, the Burnham Brothers. The result of the collaboration is an unexpectedly glamorous shades-of-gray, '70s-James-Bond-style Hard Rock Hotel with 381 rooms.

Not surprisingly, most design-oriented hotels in urban areas are renovations of existing hotels or office buildings; creating new hotels from scratch is expensive and risky. Even in Scottsdale, Arizona, the spare, stylish James Hotel occupies a former '70s hotel. Here, owners Steven Hanson and Danny Errico hired New York architect Deborah Berke to apply a cool and colorful Modern approach to the 200-room, three-story oasis in the desert. And she did so without resorting to the vigas-and-adobe construction.

But the United States still lags behind Europe and Asia in sheer quantity of adventurously designed hotels. Milan, for years a wasteland of hotel architecture, all of a sudden has become the new hot spot of Modernismo, where you can find such accommodations as the Bulgari, a soigné 52-room establishment designed by Milanese architect Antonio Citterio, and the intimate 21-room Gray Hotel, designed by Florentine architect Guido Ciompi. Even the Hyatt chain has opened the luxury, 117-guest-room Park Hyatt Milano, with American-born, Paris-based designer Ed Tuttle in charge of the interiors. A Milanese hotel, the Straf, owes its striking look to Vincenzo De Cotiis, a Brescia-based architect and interior and fashion designer. Working with slate, concrete, unfinished iron, and different textures of glass, De Cotiis renovated this 64-room hotel in a distinctive raw-sinister mode, where colors in a room range from anthracite to beige. Meanwhile, in Rome, the es.hotel (the name refers in part to the German word for id), designed by architects Jeremy King and Riccardo Roselli, who have a Rome office, has established a toehold for ultra-Modern design in this historic city. Since the 235-room hotel is not in the center of town, but is located in the Esquilino area—which some consider out of the way—it has to provide a sense of destination. The architects

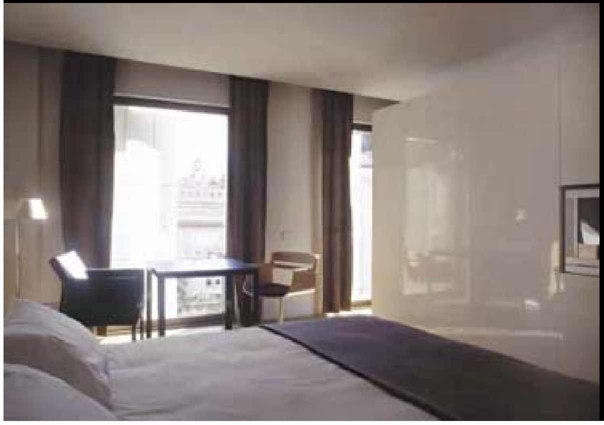
MILAN IS NOW A HOT SPOT FOR BOUTIQUE HOTELS WITH MODERNISMO, YET ROME HAS THE ULTRA-MODERN ES.HOTEL.



ES.HOTEL: In Rome, King and Roselli designed walls that face an interior court with room sensors that alter lighting colors (above). Curves define the rooftop restaurant (far left) and a bar (left). The bedrooms open onto baths (below).

PHOTOGRAPHY: © SANTI CALECA, EXCEPT LUIGI FILETICI (BOTTOM RIGHT)

HOTEL OMM: In Barcelona, architect Juli Capella and interior designers Sandra Tarruella and Isabel Lopez created sleek lobby (above right), guest room (below), and dining (right) spaces behind a sculptural facade.



PHOTOGRAPHY: © MIHAIL MOLDOVEANU

designed it to be elevated on piloti above archaeological ruins that were discovered after the hotel was planned. Curved and folded planes carry visitors through the various floors up to the rooftop, where a bar, restaurant, and fitness center are situated.

In Barcelona's Hotel Omm, renovated by local architect Juli Capella and interior designers Sandra Tarruella and Isabel Lopez, the plan and section for the 59 guest rooms achieve varying spaces internally while giving an unusual surface articulation to the new stone facade. Another hotel, the Vigilius Mountain Resort in Lana, Southern Tyrol, Italy, is smaller than most, with 31 rooms and 8 suites. A spa and hotel, it also attracts a more reclusive clientele, since it can only be reached by cable car. Architect Matteo Thun, of Studio Thun in Milan, created the pristine, wood-framed structures with grass-covered roofs that evoke the era of Aalto and Breuer.

In the small-and-remote category is the distinctive Commune, a cluster of 11 guest-room cottages plus a clubhouse next to the Great Wall of China, not far from Beijing. Each individual guesthouse is designed by a different Asian architect, including Tokyo-based Kengo Kuma (the Bamboo Wall House) and Shigeru Ban (the Furniture House).

Even more is going on in Brazil, where the 96-guest-room Hotel Unique, designed by Ruy Ohtake, and the 64-room Fasano Hotel, designed by Isay Weinsfeld and Marcio Kogan, are adding to São Paolo's allure.

Yes, there is a boom in architecturally interesting hotels. In fact, there is even an organization that fosters global fascination with this development. The Commune, the Vigilius Mountain Resort, the James Hotel, the Gray Hotel, and the Straf all belong to an association called Design Hotels, formed more than 10 years ago by Claus Sendlinger, of Augsburg, Germany. As president and C.E.O. of the association,

VIGILIUS MOUNTAIN RESORT: This 41-room hotel and spa in Italy's Southern Tyrol can only be reached by cable car. Matteo Thun of Studio Thun in Milan designed the crisp wood retreat, where nature is the main attraction.

PHOTOGRAPHY: © COURTESY DESIGN HOTELS

Sendlinger, who has a background in public relations and travel, decided in the early '90s that the hotel industry as a whole was responding too slowly to the changing demographics of the global traveler. The "mass tourists" seeing the sights and willing to stay in uniformly standardized hotels were being replaced by a more sophisticated, educated, and affluent breed "looking for variety and authenticity" in their accommodations, explains Sendlinger. But the hotel industry wasn't paying attention.

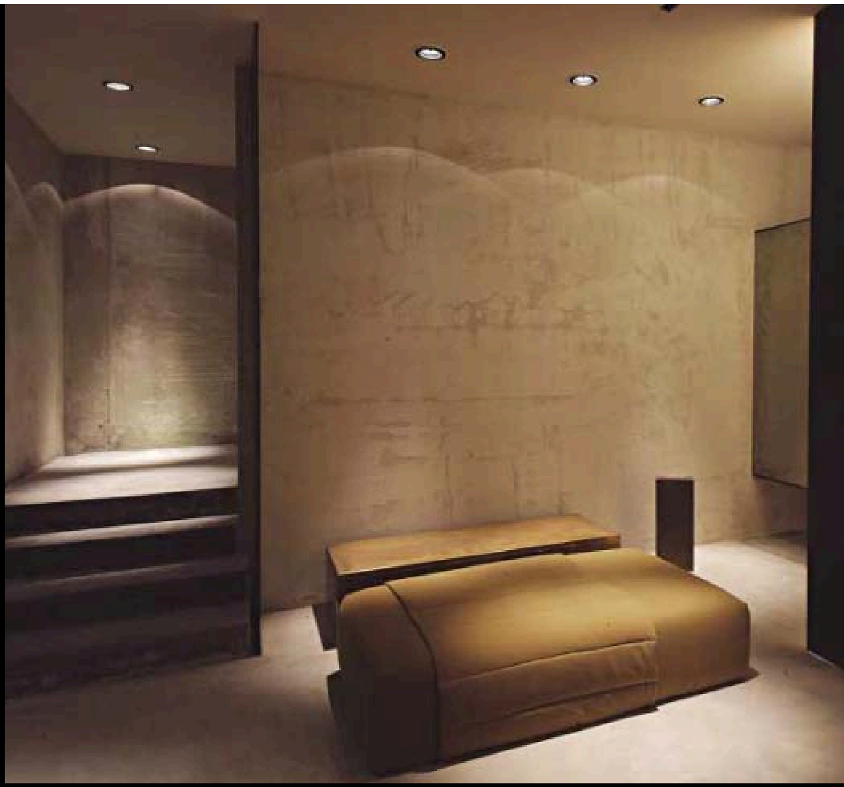
Design Hotels claims to have 120 members in its portfolio, with 30 joining it in just the past year. In the early days, Sendlinger and his staff tracked down hotels and asked them to join; now, he says, about 80 percent of members have sought out the association. In return for entrance and annual fees, the hotels receive photographic presentations in stylish directories and are provided with various forms of consultation, including their own graphic design program. "We also recommend architects and interior designers to hotel owners," Sendlinger explains, adding, "We talk to real estate developers about future sites and help them come up with a positioning strategy." Not all hotels can belong: Sendlinger says no to chains, and maintains that Design Hotels is very choosy about the look of a place, down to the arrangement of plants—not to mention the service. Although Sendlinger doesn't send around inspectors, his association keeps tabs on members through customer feedback. "We also like to follow the artistic evolution of the project," he says. "Sometimes new hotel directors come in and make changes, and you end up with a big mess."

As the commitment to high design increases in the hotel industry, there should be extra room for design by architects. But let's hope they will remember that as more and more architects become involved in this building type, comfort is still a prerequisite for the outside world. (This traveler, for example, wants a long and large makeup counter next to that sculptural sink, plus enough drawers in those ship-cabinlike storage units to properly unpack.)

But the real elephant in the room that no one is acknowledging right now is the graying of the sophisticated traveler who still prefers Modern design in his or her hotel accommodations. It is almost poignant to run into a 50- or 60-year-old architect with an avant-garde reputation at the Mondrian in Los Angeles or the Mercer in New York. There he or she is trapped amid swarms of the young and hip, with noise reverberating off of every wall, all for the sake of Modern design.

> **IT'S POIGNANT TO RUN INTO 50- AND 60-YEAR-OLD AVANT-GARDE ARCHITECTS TRAPPED AMONG THE YOUNG AND HIP.**

The cruel irony is that architects and the architecturally minded who want to stay in distinctively designed hotels—even for research, if not for pure comfort—must enter a world not necessarily geared to their comfort level. So it is not so surprising to find that a lot of well-known architects of a certain age and income who come to Manhattan stay at the Four Seasons Hotel, the traditional/contemporary, 364-room, limestone-clad structure designed in 1993 by Pei Cobb Freed, with associate architect Frank Williams and Associates. The grandly proportioned hotel is not cutting-edge, nor is it beyond Modern, as the architect-guests may have preferred. But it is luxurious, gracious, and quiet. There is a lesson here about design and demographics. It just hasn't been addressed yet by hoteliers who are hiring architects and interior designers for imaginative and innovative solutions to this ever-changing building type. ■



STRAF HOTEL: In Milan, Vincenzo De Cotiis designed the 66-room hotel with an assortment of metals and stone, plus a limited palette of colors for halls (above), dining space (right), and bedrooms (top right and below).

PHOTOGRAPHY: © COURTESY STRAF HOTEL

Hard Rock Hotel

Chicago

1

LUCIEN LAGRANGE PLAYS IT COOL, ADAPTING A CLASSIC 1929 BURNHAM SKYSCRAPER AS A HOTEL, WITH GLITZY INTERIORS BY YABU PUSHELBERG.

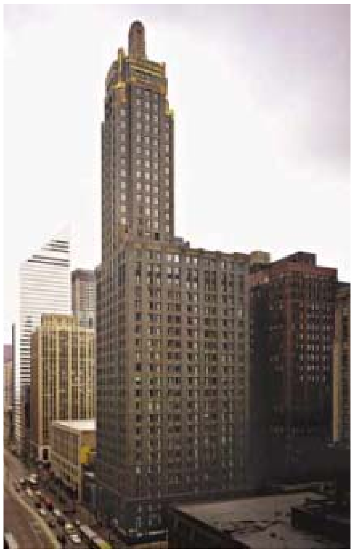
By William Weathersby, Jr.

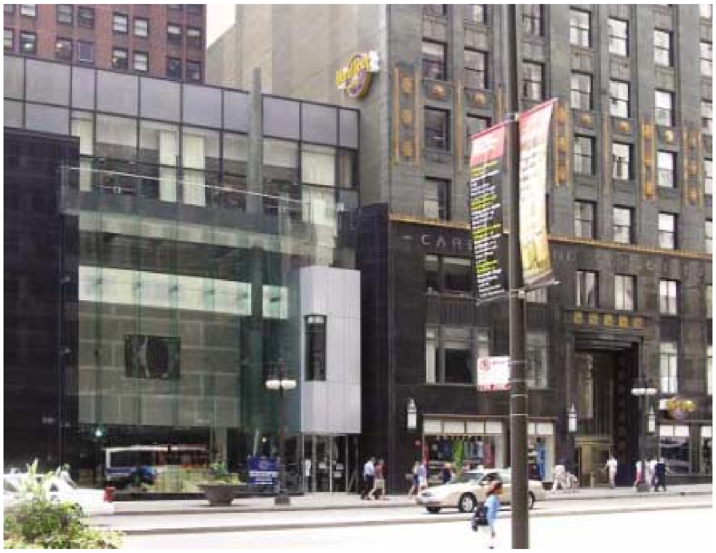
Architect: *Lucien Lagrange Architects—Lucien Lagrange, AIA, principal; Tim Hill, AIA, project manager; Chris Oakley, AIA, senior designer; Marcel Eberle, project architect; Sean Daly, Laura Garcia, Madhu Gupta, Manuel Lamboy, Jordan Rogove, project team*
Owner: *Mark IV Realty Group*
Interior designer: *Yabu Pushelberg—George Yabu, Glenn Pushelberg, principal designers; Kevin Storey, project manager; Karl Travis, Marcia McDonald, Andrew Kimber, Catherine Chain, Shane Park, Fabienne Moureaux, project team*
Consultants: *EME (m/e/p engineer); Tylk Gustafson Reckers Wilson Andrews (structural engineer); Wiss, Janney, Elstner and Associates (exterior restoration)*
General contractor: *Pepper Construction Group*

Size: *295,000 gross square feet*
Cost: *$106 million (construction)*
Completion date: *April 2004*

Sources
Glazing: *Oldcastle Glass; Weather-Tite Windows; Kawneer*
Exterior doors: *Ellison Bronze*
Carpet: *Sullivan Source*
Furniture: *Louis Interiors; Cassina; Tendex; Void Interior Furnishing*

For more information on this project, go to Projects at ***www.architecturalrecord.com***.





The Hard Rock Hotel has rolled into the Windy City, and it's not the neon-wrapped shrine of music memorabilia you might have expected. With only a discreet logo affixed to its North Michigan Avenue facade to announce its presence, the 381-guest-room hotel is the new headliner of the landmark 1929 Carbide and Carbon Building, which has been deftly restored, adapted, and expanded by Chicago's Lucien Lagrange Architects. Although interiors by Yabu Pushelberg do serve up some expected flash—with mirrored walls, portraits of rock icons silk-screened onto metal panels, and a modicum of vitrines showcasing the costumes and musical instruments of stars like B.B. King and Sting—it's a more refined look for the chain. Classic rock has replaced theme-park pop on the playlist. Indeed, the Chicago property marks a departure for the Hard Rock Hotel brand, reenvisioned as a joint venture between the Rank Group—the parent company—and Sol Meliá Hotels & Resorts, an international chain.

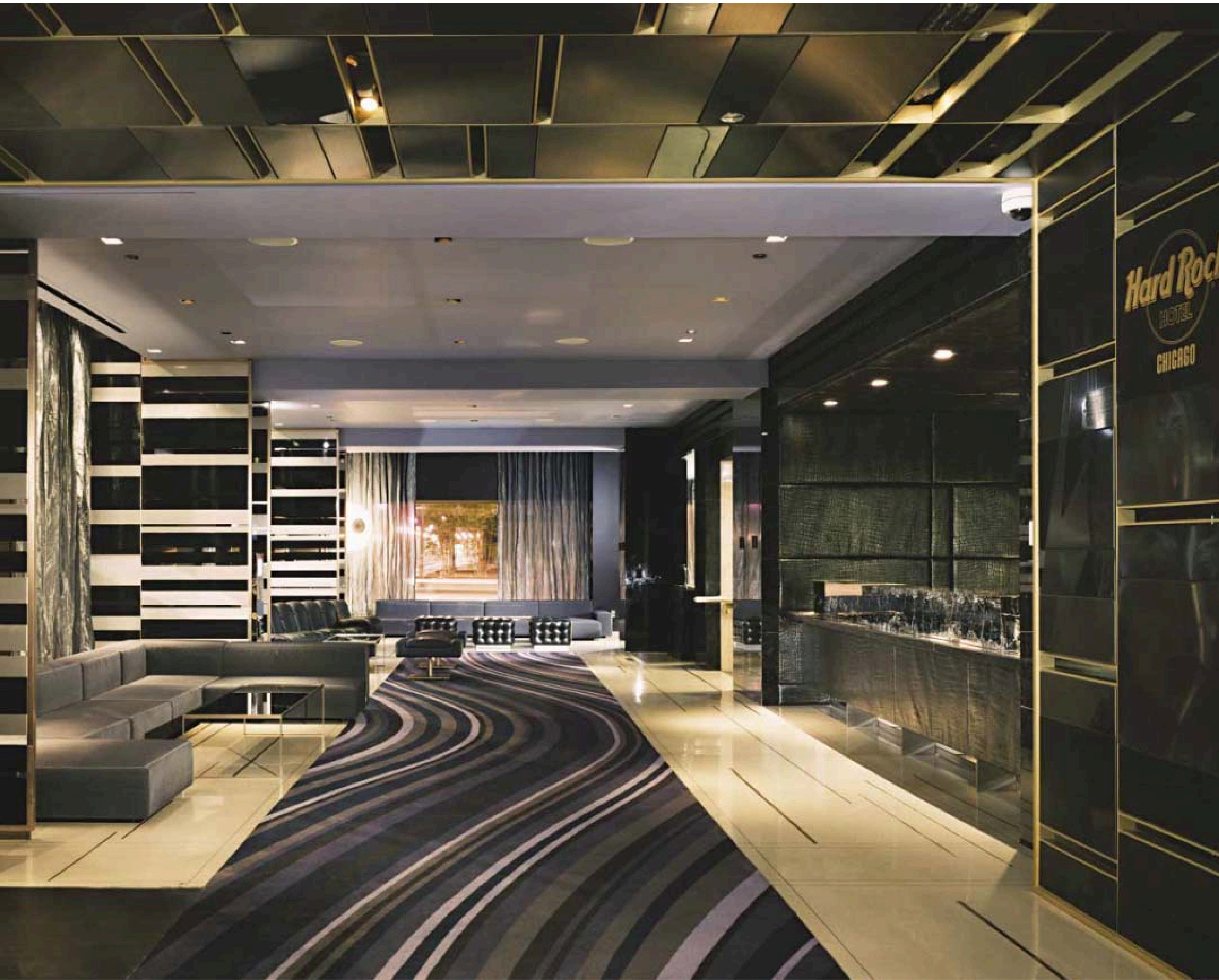
Program

While older Hard Rocks in resort locations such as Orlando and Las Vegas are targeted toward young vacationers and feature over-the-top architectural follies like oversize electric guitars jutting from the rooftops, this urban address in the heart of Chicago is geared more toward the business traveler, with 11 function and meeting spaces plus a 3,000-square-foot ballroom. And rather than present another franchise of the Hard Rock Café, the hotel this month unveils its final stage, the upscale China Grill.

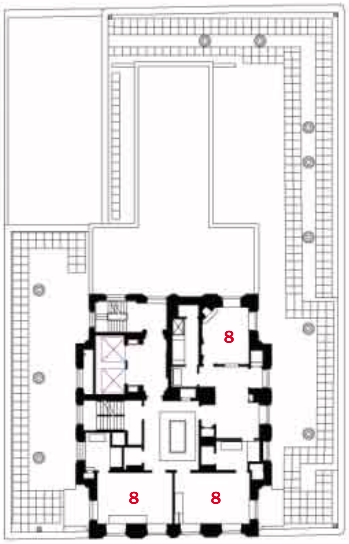
After its exterior restoration plus the addition of a sleek four-story annex, the Chicago Hard Rock is the architectural equivalent of Mick Jagger in a bespoke suit. Originally designed by the Burnham Brothers (helmed by Hubert and Daniel, Jr., the sons of legendary architect Daniel Burnham) as a corporate headquarters for the originator of the Eveready battery, the Carbon and Carbide Building shines again as a notable Chicago landmark. Considered the younger Burnhams' finest work, the Art Deco–influenced, 40-story building now shows off its dark green terra-cotta tower embellished with gold leaf rising above a base of black marble and bronze trim.

PHOTOGRAPHY: © ADRIAN WILSON, EXCEPT AS NOTED; SCOTT MCDONALD/HEDRICH BLESSING (THIS PAGE, LEFT); COURTESY LUCIEN LAGRANGE (THIS PAGE, RIGHT)

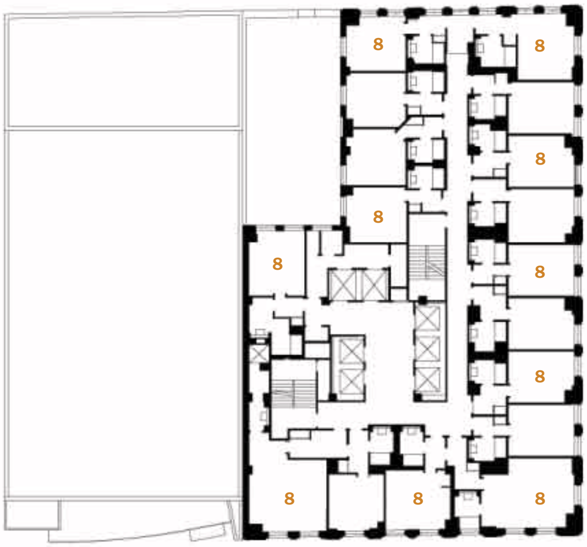
The 1929 terra-cotta facade (opposite, left) and brass-and-marble elevator lobby (near right) were restored. A new four-story addition (opposite, right) accommodates the China Grill, ballrooms, and meeting spaces. The lobby (below) and corridors (far right) offer a glamorous edge with mirrored surfaces and slick, Modern furniture.



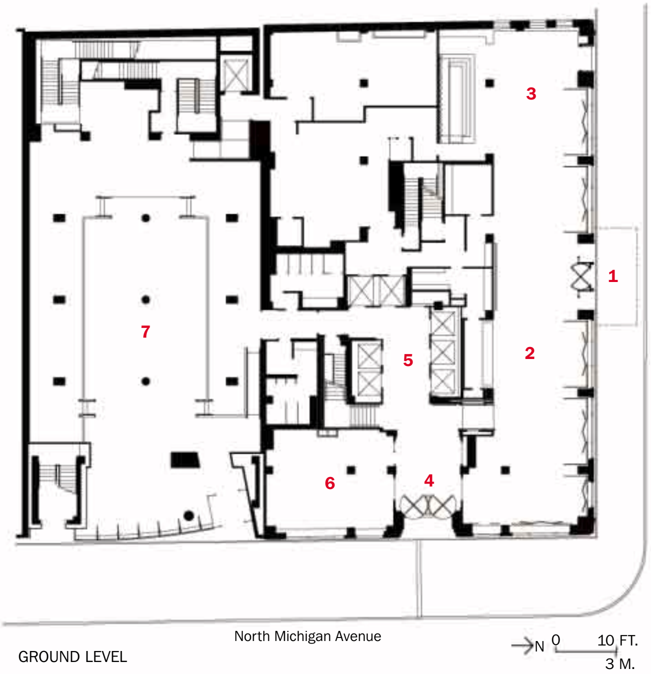
1. *Main entrance*
2. *Guest reception*
3. *Bar*
4. *North Michigan Avenue entrance*
5. *Historic elevator lobby*
6. *Retail*
7. *Restaurant*
8. *Guest room*



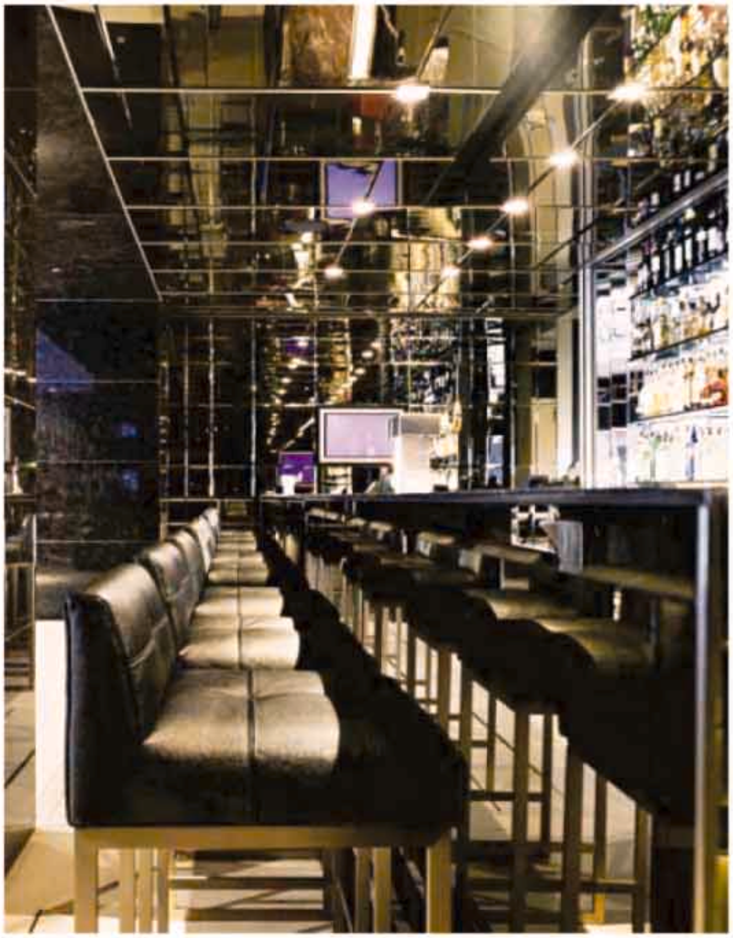
TYPICAL TOWER LEVEL



TYPICAL GUESTROOM LEVEL



GROUND LEVEL



The skyscraper had been a rental-tenant office building when in the mid-1990s the owner decided to convert it to a hotel. Its grand exterior details had been covered by grime over the years to the point that its green luster had faded to black, and original interior plasterwork was damaged. Some spaces had been carved into smaller offices and street-level stores. A challenge to contemporary hotel infrastructure, the poured-in-place concrete floor plates were a mere 2.5 inches thick. "For this building to work as a hotel, we needed to build a four-story addition with higher ceilings to accommodate a ballroom, conference areas, and dining spaces," says project architect Marcel Eberle.

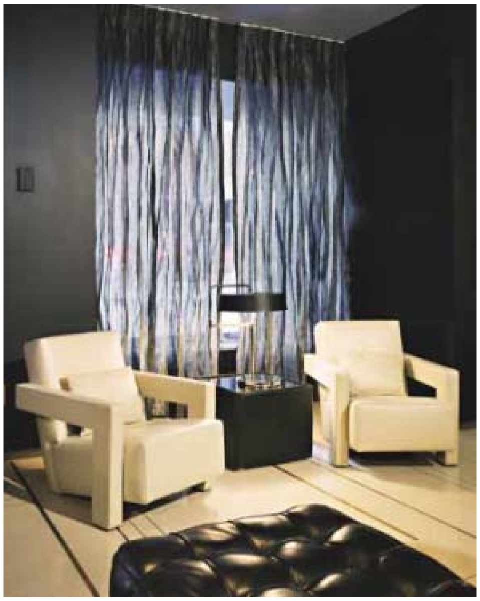
Solution

Rather than slavishly mimic the Burnham edifice, Lagrange's new addition is a jewel box that combines a structurally glazed curtain wall and zinc detailing framed by black granite walls that evoke the original building's marble base. Above the restaurant sits a double-height ballroom with a cutout window overlooking diners below and Michigan Avenue beyond. The original elevator lobby has been restored, while a new marquee on South Water Street is inspired by original Burnham details. Typical floors were fitted out with 17 guest rooms. As required by the building's landmark status, hallways on two floors were restored to a 1920s-era look with marble wainscotting and faux transoms above doors.

Commentary

Brought in 11 months before the opening, Yabu Pushelberg opted for a sexy, 1970s-retro style with shiny surfaces and receding perspectives. With mod leather and chrome furniture and a charcoal-heavy palette, the interiors strike a tinnier note than the Jazz Age facade. Still, this Burnham landmark has been burnished in a fashion befitting its classic status. ■

The Base Bar (opposite and below), tucked off the lobby (near right), plays with perspective by collaging mirror and metal along the ceiling and walls. Carpets with an undulating pattern and leather and chrome furnishings evoke 1970s rock-and-roll glamour, "almost a Playboy Club vibe," says Glenn Pushelberg. Guest rooms (far right) feature zebrawood millwork, tinted mirrors, and faux-fur throws.



James Hotel
Scottsdale, Arizona

2

DEBORAH BERKE & PARTNERS ARCHITECTS DRENCHES A DESERT HOT SPOT IN COLOR MIXED WITH MODERNISM.

By Ingrid Whitehead

Architect: *Deborah Berke & Partners Architects—Deborah Berke, AIA, principal in charge; Stephen Brockman, project manager; Jenn Duhamel, Shirley Leong, Terrence Schroeder, project team*
Architect of record: *DLR Group*
Client: *James Hotels*
Engineers: *Paul Koehler Consulting Engineers (structural); Professional Consulting Engineers (mechanical/electrical)*
Consultants: *Ten Eyck Landscape Architects (landscape); Renfro Design Group (lighting)*
General contractor: *Howard S. Wright Construction*

Size: *136,000 square feet*
Cost: *Withheld*
Completion date: *January 2004*

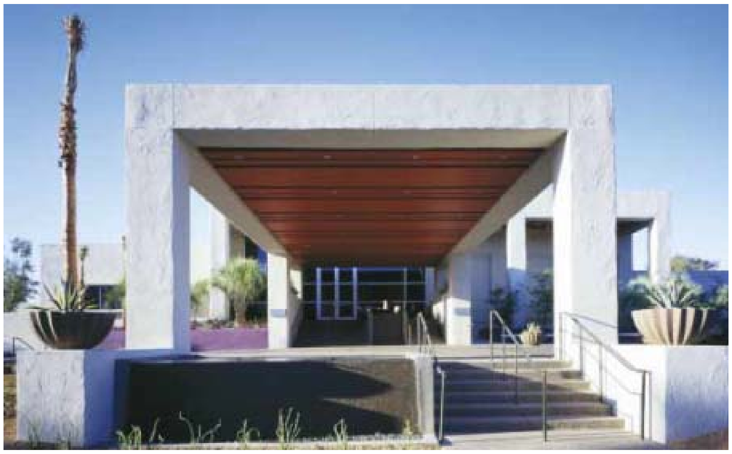
Sources
Curtain wall/glazing/aluminum lobby doors: *Binswanger Glass*
Acoustical ceilings: *Decoustics*
Resilient flooring: *Kamway*
Reception chairs/table/sofa: *DBPA*
Reception desk/shelves: *Ace Styline*
Restaurant chairs: *Janus et Cie*
Banquet pods: *DBPA*
Barstools: *Design Within Reach; Guilietta*
Lighting: *David Weeks for Ralph Pucci (chandelier); Rico Espinet for Robert Abbey (bedside, table lamps); Hallmark Lighting (floor, desk lamps)*

For more information on this project, go to Projects at ***www.architecturalrecord.com***.

Famous for its luxurious resorts and spas, abundant golf courses, and upwards of 330 days of blazing sunshine per year, Scottsdale, Arizona, a suburb of Phoenix, is an oasis in the heart of the Sonoran Desert. Yet New York restaurateur Steve Hanson and Equinox Gym founder Danny Errico saw the city, with resort hotel rooms priced at an average of $300–$400 per night, as a place that needed a more moderately priced boutique hotel, not to mention something other than adobe and cacti. "There was this gigantic void in Scottsdale," says Hanson, who is president of the B.R. Guest restaurant group, which owns the W Hotel's Blue Fin, as well as Fiamma Osteria and Ruby Foo's, among others, in New York, and Fiamma Trattoria in Las Vegas. Hanson and Errico brought in New York firm Deborah Berke & Partners Architects to design Scottsdale's James Hotel, the first of a planned chain around the country.

Program

"They're young, contemporary travelers who don't distinguish between business and pleasure trips," says Deborah Berke, AIA, of the hotel customers she set out to please. "They're moving up the ladder," adds Hanson, "but they understand value as well as style." With that customer in mind, Hanson found a 1970s-era hotel on a 7-acre site adjacent to Scottsdale's historic Old Town. The building was partially gutted and totally renovated to produce 200 rooms; 10,000 square feet of flexible event space; a 350-seat Fiamma Trattoria restaurant (Hanson brought in his Fiamma executive chef Michael White); a 2,700-square-foot, state-of-the-art fitness center; as well as a bar and two pools.



PHOTOGRAPHY: © ERIC LAIGNEL

Solution

"The existing structure was a real hybrid," says project architect Steven Brockman. "There was concrete, steel, and even some wood framing." The architects kept much of what was there, but, as Brockman says, "We worked with light, color, water, and landscape to add luxury where there wasn't any before." Even the porte cochere (in photo above) had previously existed, but the architects added dramatic lighting to give the guests a grand entrance.

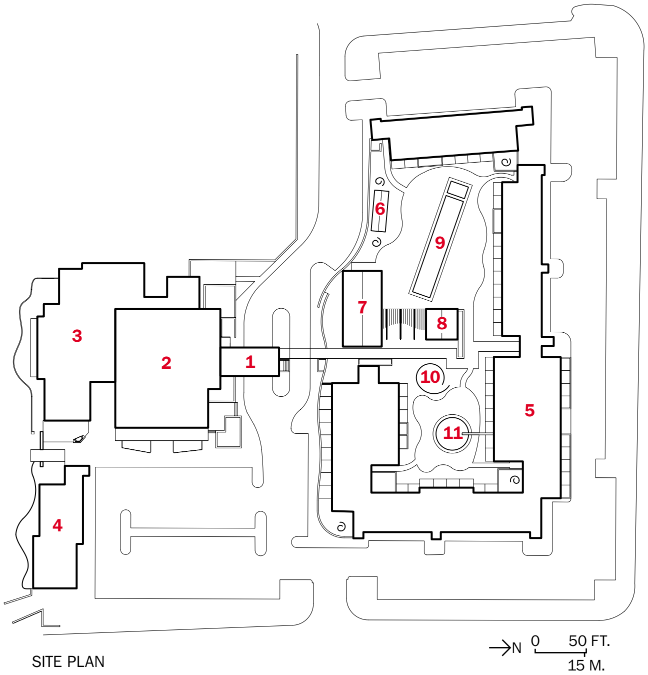
With the existing buildings forming a campus, Berke kept the envelopes of the 325-square-foot rooms in five 3-story buildings. These are accessible to each other and the building containing all public spaces by outdoor corridors, maintaining the campus feel and blurring the boundaries between indoors and out.

Room renovations created an ambience of clutter-free luxury, evidenced by 42-inch plasma screen TVs, a 15-foot work space with shelves against one wall, and custom-made platform beds.

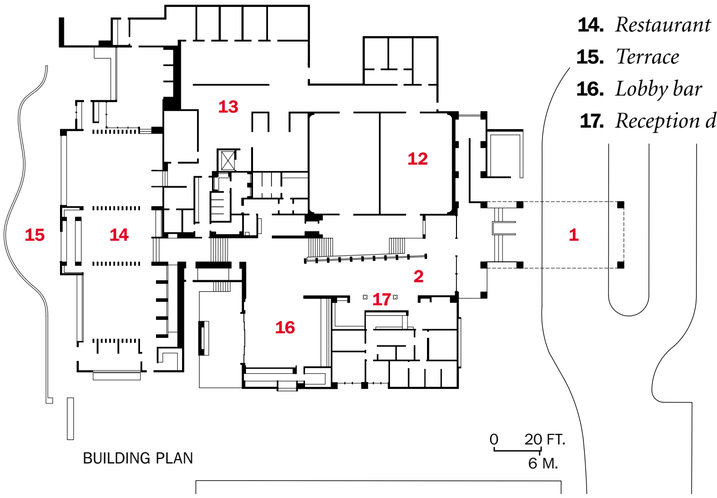
Berke, known for sparse, white, Minimalist design, played against type with the interiors. "We went for color," she says, "intense color."

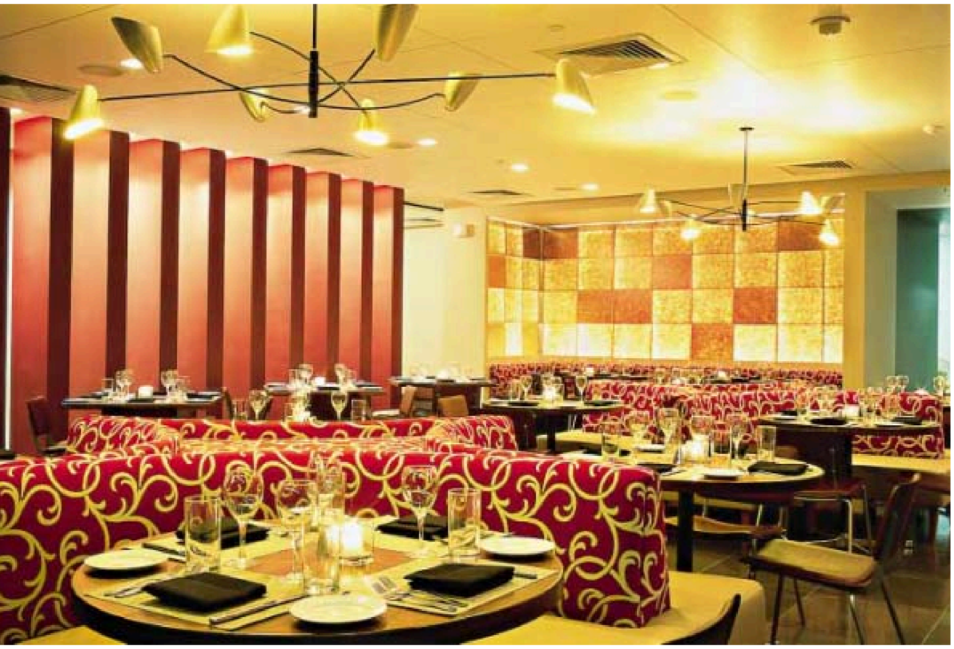
Luis Barragan–inspired purple and fuchsia paint sets off the restaurant's outdoor fireplace, while over-the-top Sheetrock columns in red line the double-height lobby. A white wall at the lobby's end projects James Cagney and James Dean movies around the clock: a not-so-

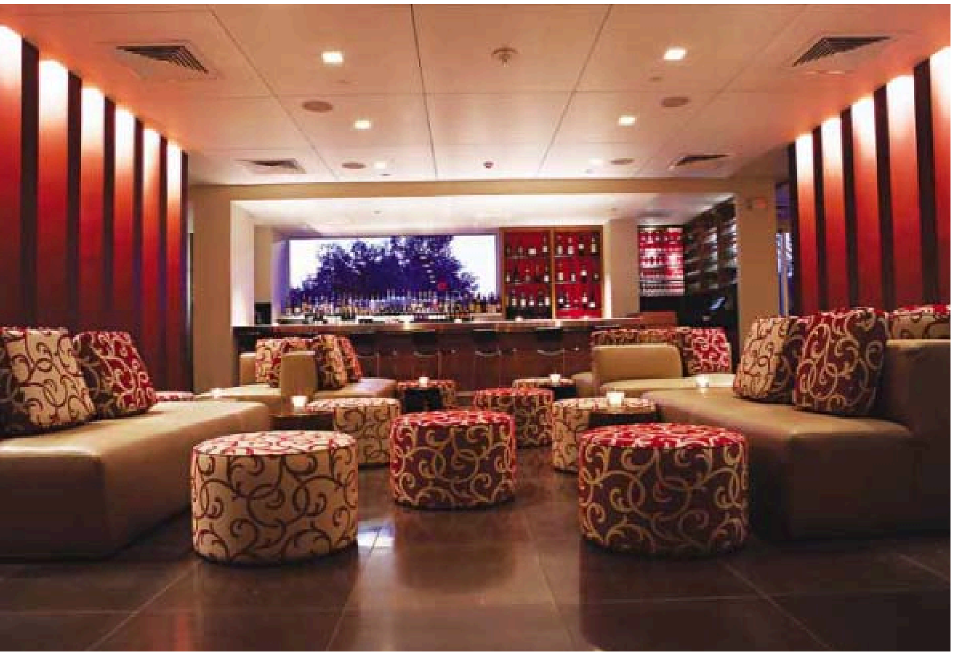
A Barragan-inspired fountain pours into the outdoor pool (right), which has the word "play" inscribed in tile at the bottom. Berke fashioned the poolside slatted-teak cabanas draped in muslin (far right and below), where at night guests can treat themselves to private, moonlit massages.



1. *Porte cochere*
2. *Main building/lobby*
3. *Dining area*
4. *Executive wing*
5. *Guest-room buildings*
6. *Massage pavilion*
7. *Fitness building*
8. *Pool bar*
9. *Large pool*
10. *Yoga circle*
11. *Small pool*
12. *Ballroom*
13. *Kitchen*
14. *Restaurant*
15. *Terrace*
16. *Lobby bar*
17. *Reception desk*







Berke designed the furniture in the restaurant (left) and bar (below) with 1950s bold patterns and loud colors. The David Weeks–designed chandeliers provide subtle lighting in the restaurant, although most of the lighting comes from multiple, hidden sources. In the bar, a vertical neon tube is concealed by each "fin," resulting in a wall glowing with ambient light.

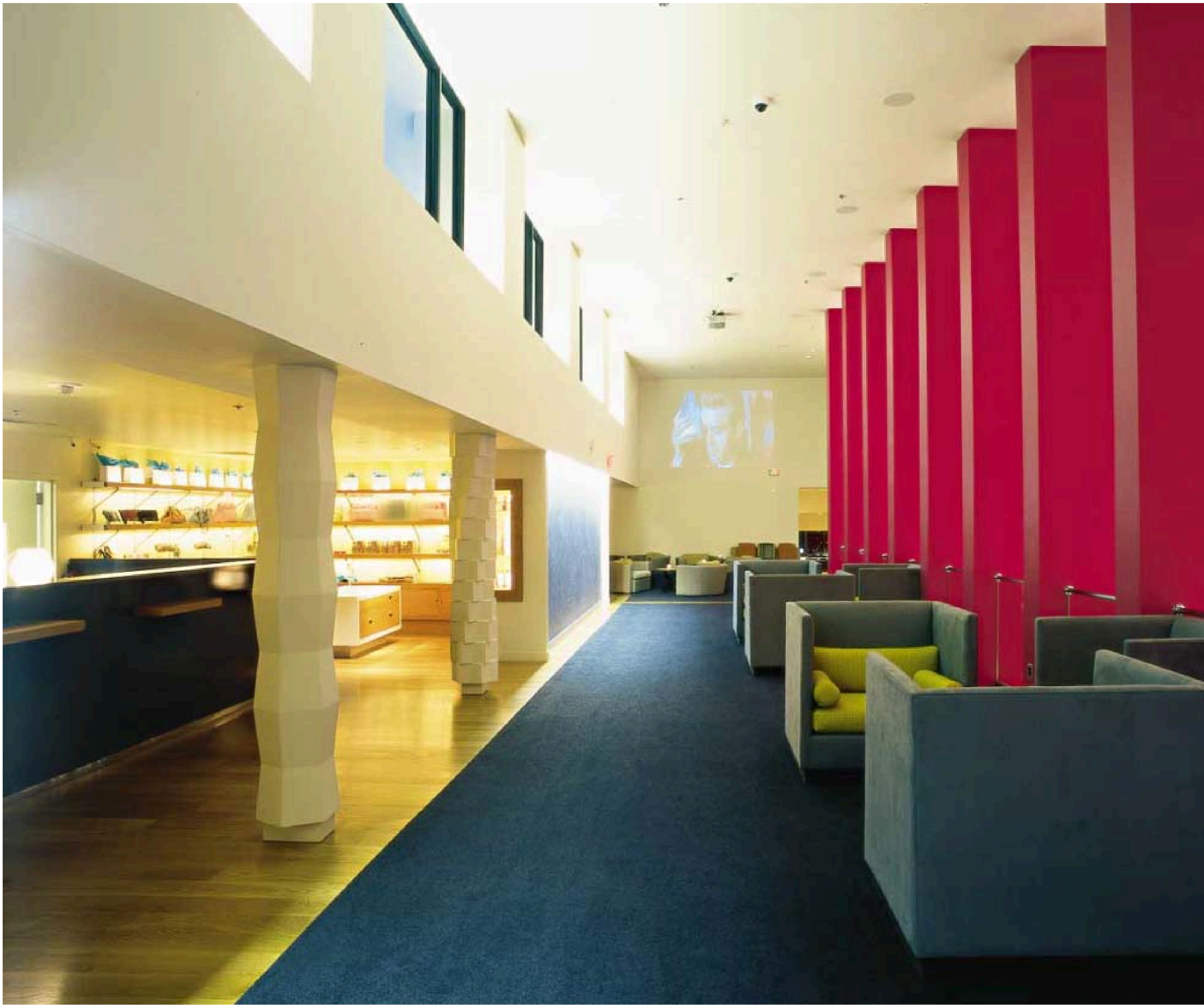
subtle reference to the hotel's name. ("It's also named after James the butler," says Hanson.)

Commentary

With rooms from $100 to $285, depending on the season, the James is an affordable retreat. Still, if you just want to stop by for a quiet drink, make sure you're on the guest list, as New York's infamous "velvet rope" seems to have been imported along with the owner and architect. Celebrities such as Paris Hilton and Mike Tyson have been spotted, and much of the crowd seems less black-clad New York stylish than surgically and chemically enhanced Barbie and Ken. The bar and restaurant are packed every night, though, and with the success of the Scottsdale James, owners Hanson and Errico are ready to start the hunt for their next sites, planned for Chicago, Los Angeles, and Miami's South Beach. According to Hanson, the budget will stay slim, and the owners plan to find slightly undesirable existing buildings to renovate, rather than build from the ground up.

The general feel of the hotels as well as the room templates are set for the next installments, but the public spaces will change according to site and location. "And we won't go for such intense color next time," says Hanson. "That worked well for Scottsdale, but we'll definitely tone it down for the next James." ■

Rooms lack clutter but stay functional, with a 15-foot desk extending along one wall (right). A luminous corridor leads from the lobby to the restaurant (far right). A line of bright-red columns (below) demarcates the lobby, providing a backdrop to the crisply rectilinear Berke-designed lounge chairs, upholstered in faux suede. The reception area is defined by a lowered soffit and sculptural columns.



Bulgari Hotel

Milan

3

ANTONIO CITTERIO AND PARTNERS LAYS ON LUXURIOUS MATERIALS IN THE DEBUT BOUTIQUE HOTEL BACKED BY A FAMED ITALIAN JEWELER.

By William Weathersby, Jr.

Architect, interior designer: *Antonio Citterio and Partners—Antonio Citterio, Patricia Viel, principals; Flaviano Capriotti, Ella Dinoi, Lavinia Sciacchitano, Thore Schaier, Tilman Schmidt, Francesca Simen, Diego Di Paola, Carmine d'Amore, project team*
Architect of record: *Ruggero Ercoli*
Client: *Bulgari Group*
Consultants: *Angelo Ferraresi (engineer); Sophie Agata Ambroise (landscape design); Metis Lighting (lighting design)*
General contractor: *Pace 80*

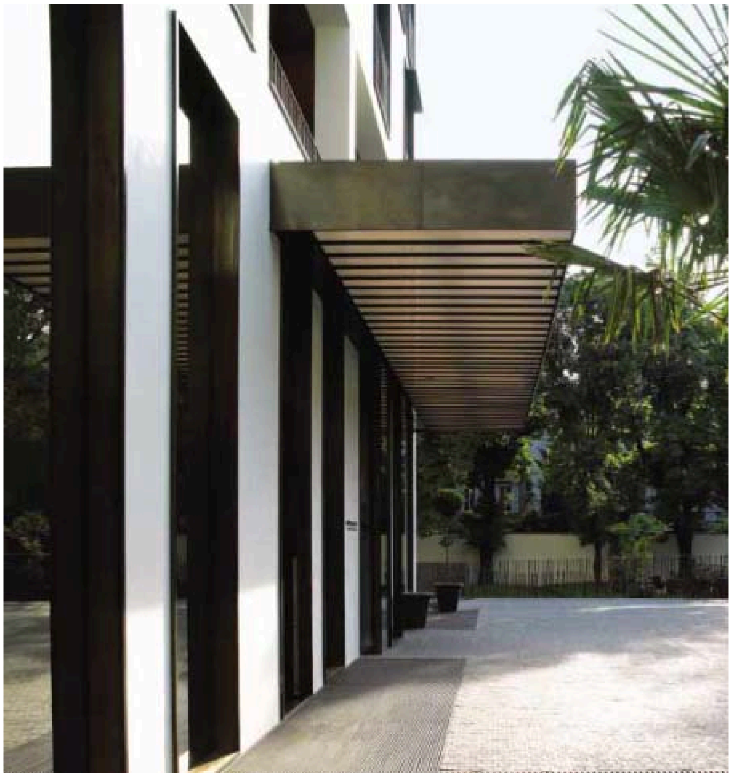
Size: *75,000 square feet*
Cost: *Withheld*
Completion date: *April 2004*

Sources
Masonry: *Colora*
Stone: *Rigo Marmi*
Wood: *Corbetta*
Glazing: *St. Gobain*
Doors: *Astec; Brevetti Sisti; B&B Italia Contract; Lualdi Porte*
Acoustical ceilings, custom millwork, paneling, furniture: *B&B Italia Contract*
Wall covering: *Braendli*
Mosaic tile: *Trend*
Plumbing fixtures: *Sanitec Group; Inda; Hansgrohe; Fusital*

For more information on this project, go to Projects at ***www.architecturalrecord.com***.

Just off Milan's chic shopping boulevard Via Montenapoleone on a quiet street behind La Scala, the Bulgari Hotel, designed by Antonio Citterio and Partners, is an oasis of calm in the fashion capital. Adapted from a former convent that incorporates a building dating to the 18th century, the 58-room hotel surrounds a lush garden whose framework was plotted in the 1300s. The hotel still retains the feeling of a cloister, albeit a sybaritic one. A spa lap pool is lined with gold mosaic tile, while public areas are wrapped in exotic materials such as African marble, Turkish stone, and Burmese teak. Yet with the lavish surfaces counterpoised by the architect's rigorous rectilinear geometry, the effect seems almost restrained.

"I wanted to play with typical perceptions of luxury and quality," says principal architect Antonio Citterio. "Some high-end international hotels can seem vulgar, with too much overscaled furniture and overly ornate finery to signify opulence. With Bulgari, we explore the richness of every natural material, and let each speak for itself."



PHOTOGRAPHY: © LEO TORRI

Program

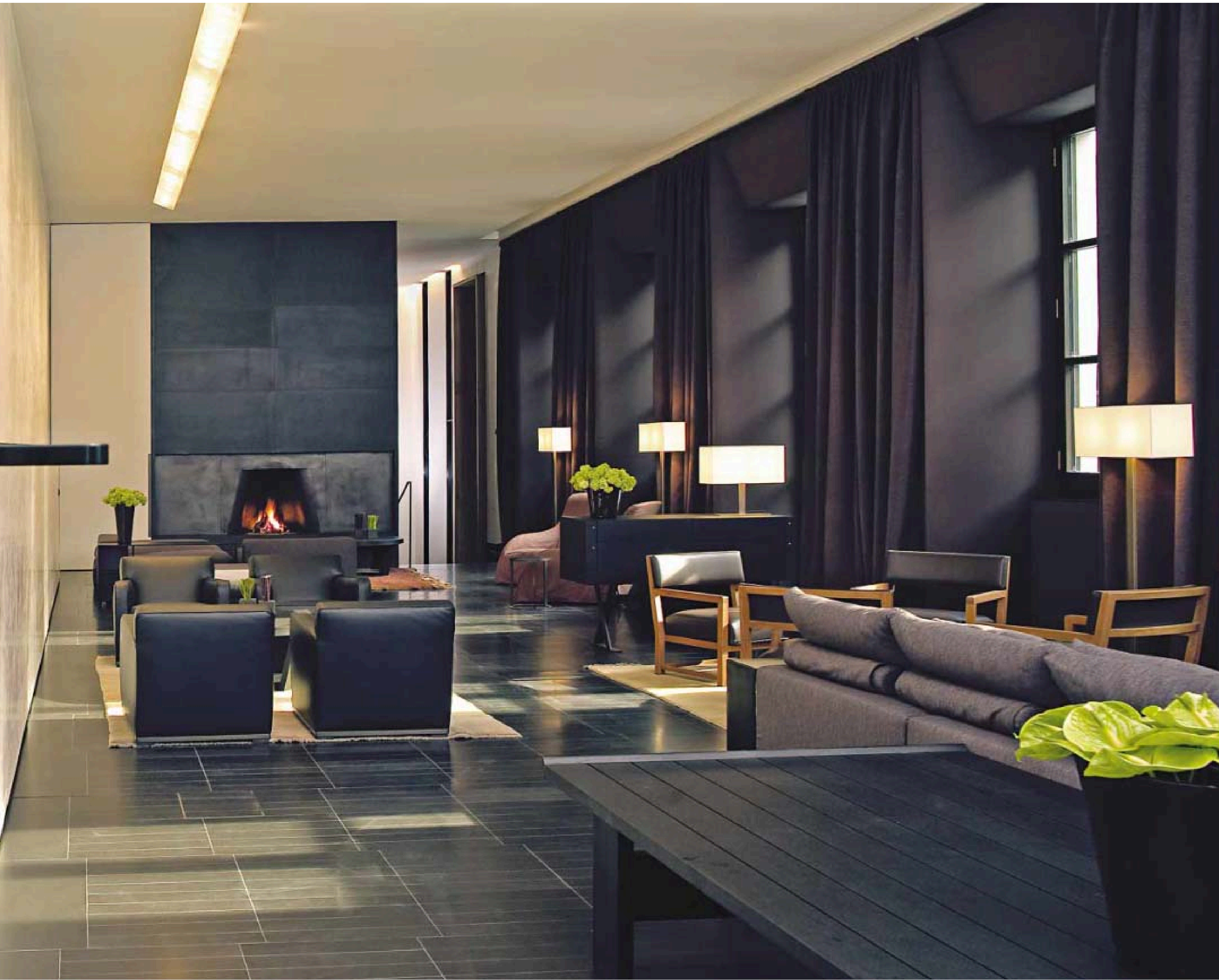
Bulgari joins other top Italian fashion brands, including Armani, Krizia, Versace, and Ferragamo, who have recently spun-off hotels. And the jeweler is jumping in on a grand scale. Parent company Bulgari Group has teamed with the Ritz-Carlton Hotel Company, which will manage its properties, and plans to launch six additional hotels internationally by 2008.

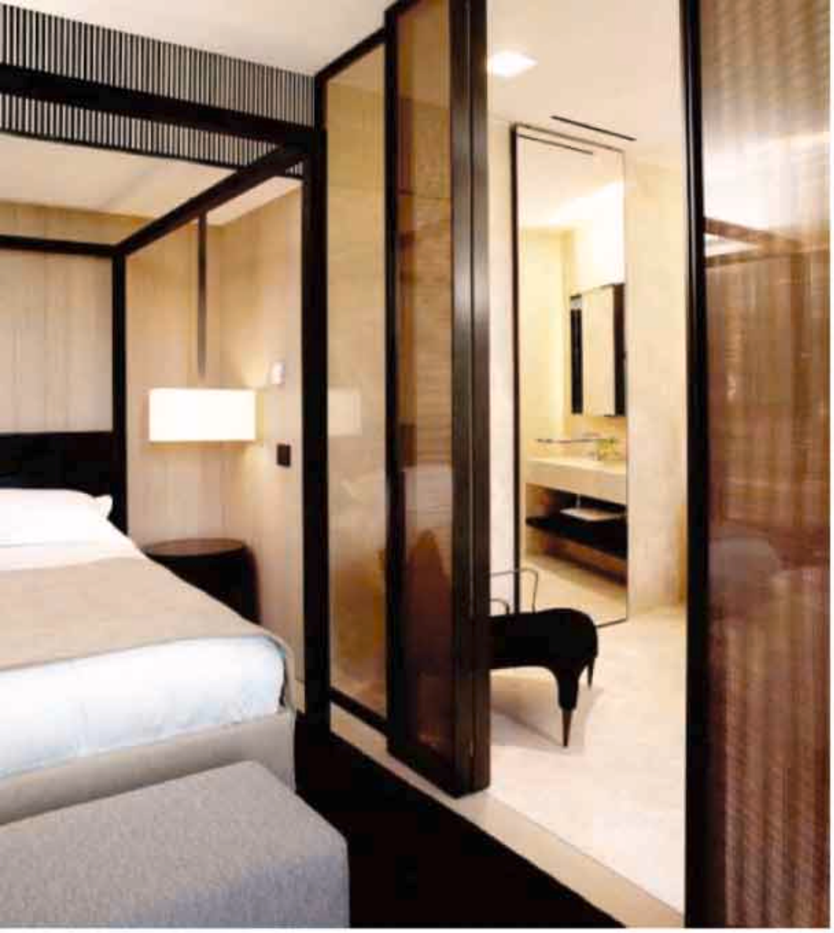
In Citterio, the client has enlisted a high-profile star of Italian design, known for his integrated approach to architecture, interiors, and furnishings. Among other projects, the architect has designed interiors for De Beers LV, B&B Italia [RECORD, March 2003, page 209], Valentino, and Cerruti. His award-winning product designs encompass furniture, lighting, plumbing, and cutlery. The Bulgari in Milan takes advantage of Citterio's wide-roving design eye; the architect selected or designed everything, down to spa sponges and custom coat hangers.

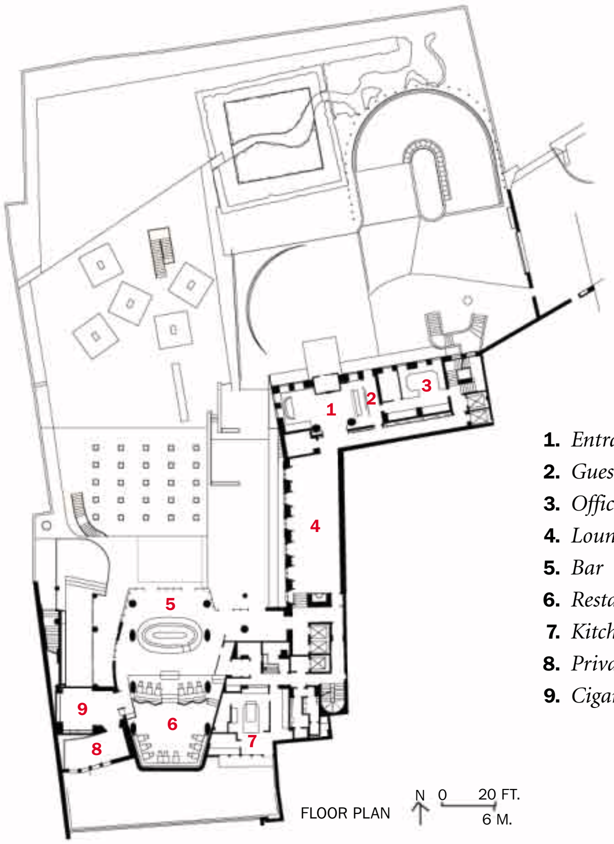
Solution

Situated on the Via Gabba, the hotel presents a new abstract, Modernist facade in juxtaposition to the street's Art Deco apartment buildings. The facade, which Citterio calls a "blank field," is pierced by tall, oak-framed windows lined with black granite eaves, and is intended to express

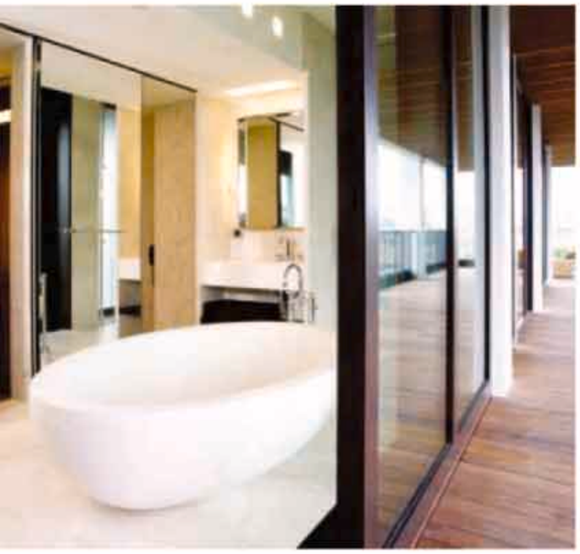
The white marble facade is punctuated by a cantilevered bronze canopy and oak window frames with black granite eaves (opposite). The hotel encompasses an 18th-century structure and surrounds a garden (right and far right) bordered by teak decking. The lobby is wrapped in black marble (below).

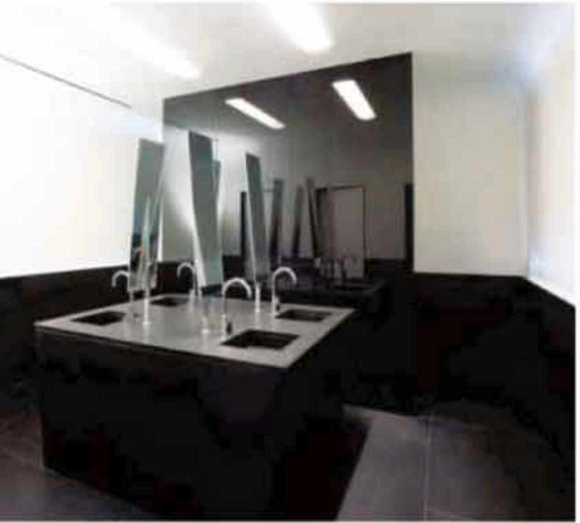






1. *Entrance*
2. *Guest reception*
3. *Office*
4. *Lounge*
5. *Bar*
6. *Restaurant*
7. *Kitchen*
8. *Private dining*
9. *Cigar lounge*





Citterio designed or selected all the furniture and accessories in the guest rooms (above), down to bath sponges and custom coat hangers. A freestanding travertine tub is separated from the sleeping quarters by a gold-mesh screen (above and left). A restroom is distinguished by a black marble lavatory designed by the architect (bottom left).

“refinement and lightness in contrast with the massive neighboring stone buildings,” he says.

As guests approach the hotel, its garden can be glimpsed through a wall of shrubbery. The 18th-century section of the facade has been restored, its blocky cornice echoed by the adjacent march of new windows. A cantilevered bronze canopy balances the composition.

In the lobby, coffee-colored walls of veined teak complement a fireplace and floors clad in black Zimbabwe marble. Low-slung contemporary furniture is upholstered in black leather or natural cotton. Tall, narrow windows overlook the entry court as well as the garden.

The Bulgari restaurant features a lenticular ceiling suspended over a bronze bar. A large oval balcony of black resin overlooks four landscaped terraces, which serve as extensions of the interior space. Teak decking provides a visual connection to interior paneling.

Guest-room corridors are sheathed in graphite-dyed oak and fabric-upholstered walls. Doors to guest rooms, which Citterio likens to the portals of jewelry vaults, are almost a foot thick to provide acoustic privacy. In each room, bleached oak surfaces are combined with bronze detailing and natural cotton upholstery. Freestanding black-granite or travertine tubs are separated from sleeping chambers by screens of gold mesh.

Commentary

Designed by Sophie Agata Ambroise, the garden itself is a gem. Evergreens climb a helix-shaped pergola, and pathways are bordered by roses and box-tree topiaries. A meditation “room” has a hedge of red beech surrounding a parterre of lilies of the valley: Urban luxe is translated into botanical lushness.

With all furniture and accessories designed by the architect, it might as well be called the Hotel Citterio. Many products—from linear chrome lamps to bathroom faucets—are familiar from design catalogs. It is perhaps a fitting collection: Since Citterio lives just 300 feet away, he calls the Bulgari his “home away from home.” ■

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How does it look?
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How does it happen?

Designers are using new technology and chemistry to unlock nature's design secrets.

Hotel Side, Hamburg. Jan Störmer Architekten. Courtesy Sto Corp.

Walk outside. Look around you. Now, look again.

Ask yourself, again, as you did when you were a child, "Why is the sky blue?"

What until now we have taken for granted in nature may hold tomorrow's design secrets.

Already, we have captured the changing hues of the earth's oceans and turned them into glass. We have taken the same, fragile glass, suspended it in air, and walked upon it. We can turn lifeless concrete into a shimmering pool; a convention-center-size ceiling into a changing, afternoon sky; colorless clay into breathtaking kaleidoscopes of color. Soon, we'll be transmitting light through concrete block walls.

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Use the learning objectives below to focus your study as you read **Color & Texture.** To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 170, then follow the reporting instructions on page 246 or go to the Continuing Education section on *archrecord.construction.com* and follow the reporting instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

- *Have a better sense of the trends in color and textures in design.*
- *Know the materials that can be used to achieve desired color and texture.*
- *See the trends in color and texture in various project types.*

Secrets of nature are being revealed and utilized in unimaginable ways.

Architecture has long been influenced by science, but, perhaps never so overwhelmingly. Tomorrow's themes of color and texture will be not so much a matter of matching paint chips as creating entirely new combinations of materials, textures and colors—to create dazzling visual displays that both delight and give flight to imagination.

Nowhere are the technologies of color and texture so evident as in the retail marketplace.

Prada commissioned 2001 Pritzker Architecture Prize winners Jacques Herzog and Pierre de Meuron and Rem Koolhaas' OMA to transform the retail experience into something like the milk bar in Stanley Kubrick's "A Clockwork Orange" in separate projects in the U.S., Japan and Italy.

"Prada Aoyama…sets out to redefine the traditional distinction between glass curtain wall, structure and façade, in the process eliminating the traditional differentiation between architecture, shop window and display. Everything is a display; everything is architecture. In fact, everything is a spectacle," says Studio International's Kwah Meng Ching.

Before Prada, Herzog and de Meuron employed printed, translucent walls to filter light to a factory and storage building in Mulhouse, France; employed twisted copper strips in an exterior cladding system to admit daylight to a railway utility building in their hometown of Basel, Switzerland; and at a library for the Technical University in Eberswalde, Germany, created a mind-bending visual, using 17 horizontal bands of iconographic images silkscreen-printed on glass and concrete.

Prada commissioned 2001 Pritzker Architecture Prize winners Jacques Herzog and Pierre de Meuron and Rem Koolhaas' OMA to transform the retail experience into something like the milk bar in Stanley Kubrick's "A Clockwork Orange" in separate projects in the U.S., Japan and Italy.

Los Angeles architect Giorgio Borruso similarly turned retail architecture upside down with West Coast projects for boutique retailer Miss Sixty and Italian clothier Fornarina.

What is successful in retail, U.S. designers generally agree, eventually makes its way into other markets, first into corporate and hospitality, eventually into institutional projects. At least portions of what Borruso is doing today at Fornarina, they say, will creep into U.S. General Services Administration RFPs 10 years down the road.

Polished porcelain tile. Courtesy Portobello.

"In terms of surfaces in general, whether we are talking color, texture, light transmittance—whatever characteristics, we are becoming much more interested in the complexity in surfaces, not just in the aesthetics, but in the structure," says Elva Rubio, who heads the Chicago design studio for San Francisco-based Gensler.

"For quite a while," says Rubio, "say, from the emergence of the post-modernist era through the end of the 20th century, we were interested in surface color and texture only in a superficial way. Now," she says, "everybody is thinking more deeply about the 'structure' of color. You can see it in retail; you can see it in architecture; you can see it in industrial design."

In their search for new visual imagery, today's designers have at their disposal an array of new products, a huge new palette of engineered colors and an almost incessant stream of new technology.

James Carpenter, whose "Lens Ceiling" at the Richard Meier-designed Phoenix federal courthouse was a 2003

Benedictus Award winner, says that the primary focus of his design is always "the exploration of the natural phenomenon of light in transmission, reflection and refraction as they influence architecture."

…we are talking color, texture, light transmittance—whatever characteristics, we are becoming much more interested in the complexity in surfaces…

Carpenter's inspiration for Phoenix, where his suspended lens forms the ceiling of the Special Proceedings Courtroom: a bubble of air resting gently on a surface of water. "The structure is so strong that people can walk on it to clean it," remarks a Benedictus juror; "an engineering and artistic marvel," says another.

Rubio says Gensler collaborates, in box-lunch sessions, with researchers in a variety of unusual disciplines in pursuit of out-of-the-box answers to seemingly elemental design problems, asking questions like, "What makes the sky blue?"

The answer, of course, is that things in nature are sometimes not what they seem, that the color of the sky is a result of refraction, not pigmentation, and that color can be a deceptive element.

In Chicago, trying to understand how they might "magnify" light to illuminate a cavernous public space, Gensler designers called in scientists to share results of studies of a Costa Rican butterfly.

"Pilots say they can see from the air the flash of the wings of the bright, blue Violet Morpho when it opens its wings in the jungle below," Rubio says.

When light strikes the butterfly's wings, researchers have discovered the light is somehow magnified, a trick of evolution, an iridescent "deceit" in the mating ritual of the Morpho. Gensler hoped to figure out how it might similarly "magnify" light to illuminate with fewer lumens.

The firm's exploration of design opportunities led it to discussions with Jay Harman, a former naturalist with the Australian Department of Fisheries and Wildlife, now CEO of an industrial design firm that calls itself PAX Scientific.

Harman logged thousands of hours studying the flow patterns of ocean and air currents, came to conclusions about the effectiveness of natural flow systems and from them is developing revolutionary designs for fans, turbines and pumps.

"Nature knows how to move fluids," says Harman. "Now PAX knows what nature knows."

Now Gensler knows what PAX knows, at least in part.

Their forecast for 2005?

This is what Andrea Piontek, senior color stylist for PPG Industries' paint division and a CMG member, has to say:

There won't be a huge directional change in color, but more of a value change. Values will move lighter, as colors will become washed with gray. Colors continue to cool down, while neutrals are influenced with yellow, to become complex. Reds are softened and neutralized, the greener blues are shifting to green, and blues influenced by the spa experience rejuvenate the palette to reflect comfort and security. In addition, soft fresh yellows infuse the palette to signify a positive outlook on the future.

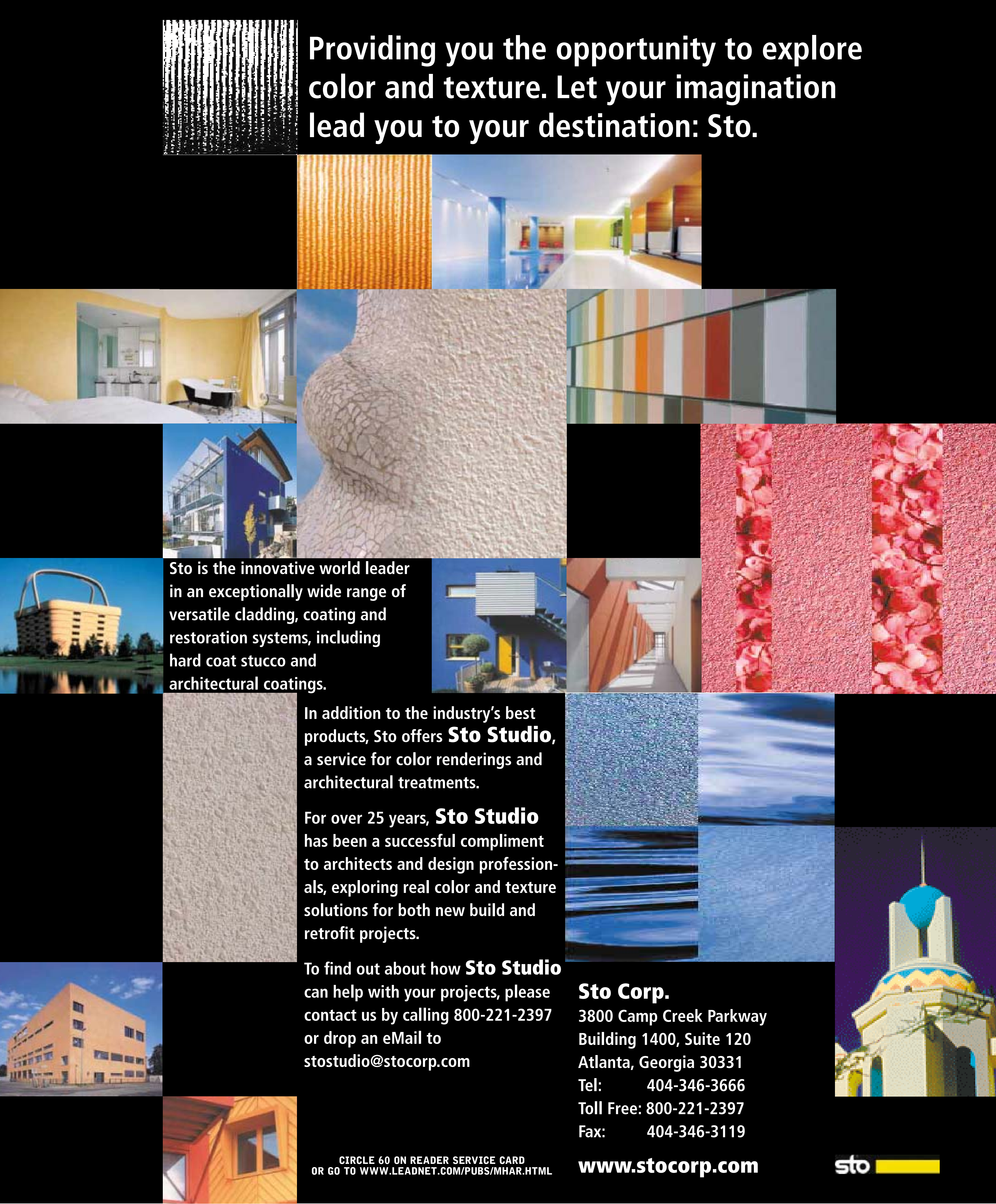
So, there you have it…

The predominant residential color schemes in the coming year? Piontek says "Harvest Gold" is back in vogue:

Contrast will gain importance for color schemes, such as deep royal blue combined with spice make their spirits soar, and take inspiration from the cues of nature. The monochromatic combinations that were safe in the past are retreating to make room for the contrasting combinations of color.

Neutrals will grow in popularity, as the term neutral continues to envelop more and more colors. In the past, neutrals were considered colors lacking color. That couldn't be further from the description today, as colors that are infused with gray move to the neutral category and are used in combination with a variable myriad of color.

There is a hot new color every month, since the cycles of color are shortening. Colors that were popular two to three years ago are making their way back to the market. The color that was known as "Harvest Gold" in the '70s is back again for the second time in five years, but it isn't the muddy color of the '50s '60s and '70s, but a clean vibrant color. Gold is a great accent color, like jewelry in a room; all colors look good with gold.



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The impact of color

Researchers have understood since early in the 20th century that color can have a significant impact on behavior. Fast food restaurants now know that red and orange increase appetites. Casinos understand that the same colors have the effect of making people gamble with greater abandon. A Washington State University study concludes that people can tolerate more pain, recover more quickly from surgery and use fewer drugs when they are surrounded by green.

QuadPlex in Frankfurt/Main. Architect: Marcel Kaschub. Courtesy Sto Corp.

Our color choices also are influenced by climate. Northern homeowners overwhelmingly choose medium-to-dark color schemes with dark woods because they feel "warmer." Southern homeowners strongly prefer pastel color schemes with light woods to achieve the opposite effect.

In forecasting what they believe will be tomorrow's sought-after colors, members of organizations like the Alexandria, Va.-based, 1,500-member Color Marketing Group (CMG) rely on world events, economic indicators, demographic change, and perceptions of pressure in the workplace.

"We are watching a merger of technological and human influences in both color and textures," says Doty Horn, director of color and design for Benjamin Moore & Co. "We are also seeing a lot of residential influence in the areas of offices and health care."

Paint manufacturers, like those in almost every other area of construction, have grown increasingly responsive to the demand for "green" building projects. Last year, Benjamin Moore obtained both GreenGuard and Greenseal certification for its line of low-emitting interior paints. This interior line of products, which consist of a primer and three finish coats, are "green" because they emit virtually zero VOCs and low odor. The company has successfully removed solvents that are responsible for the odor of traditional paint. Both oil-based and conventional latex paints are solvent-based.

Benjamin Moore has successfully removed all solvents that are responsible for the odor of traditional paint, as well as contributing to placing harmful VOCs into the environment. The products are high in hiding, odorless during application, rapid-drying, and clean up easy with water. They are also VOC compliant, and allow for a quick return to service/occupancy.

The products are available in three finishes: flat, eggshell and semi-gloss. Each finish comes in a pure white has a high light reflectance value (LRV) of 90. Tinting bases in each finish will produce an additional 1,100 custom shades, giving clients a wide choice of colors.

Among the new tools to make color choices easier are "personal color viewers," available online, which enable users to see their room and click through thousands of different color choices and combinations to see the effect prior to purchase.

Color samples allow you to "try on" a color before committing to the time and expense of painting an entire room. Interior designers and professional painters do a "brush out" when deciding on color when deciding between several shades of a particular color, or to see how a color is influenced by lighting.

Ask William "Billy" Rosbottom about architects and color and he quickly cites Terence Riley, a partner in Keenen/Riley Architects, New York, and Curator of Architecture and Design at the Museum of Modern Art.

Prosperity manifests itself in richer, textured designs with greater depth and complexity…

"Architects are afraid of color for a couple of reasons," Riley contends. "The first is our fairly well-justified fear of fashion. Who wants a building that turns out to be like an avocado refrigerator, the equivalent of permanent bell-bottoms. The second reason is the unjustified belief that color is not critical. Not enough architects approach color in an intellectual way; we are trained that the ideas are in the lines."

Rosbottom, a former interior designer for a Los Angeles environmental design firm, today manages Sto Studio Atlanta, one of 25 Sto studios worldwide. Sto manufactures a broad range of both organic and inorganic silicate and synthetic

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The goal for Salt Lake City's new main library building was to reflect and engage the city's imagination and aspirations. Achieving this required a sweeping and sunlit design, a desire to embrace the view of the nearby Wasatch Mountains, and a call to a member of the *PPG Certified Fabricator*℠ Program.

Bringing this level of open, compelling design to a public library also brings an elevated concern for UV protection and heating costs – all of which can complicate an already tight schedule. But by specifying *Solarban*® 60 solar control low-E glass through a *PPG Certified Fabricator*℠, you get the right glass from a qualified, local supplier – delivered at the right time.

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plasters and admixtures including a marble powder suitable for polished finishes from satin to high-gloss.

Rosbottom believes that color, too often, is discounted by design professionals

"Architects," he says, "very often, have so much on their plates—code decisions, leaking windows, difficult roof membrane systems and HVAC decisions that are critical to the performance of their building—that they can't focus on something so integral as color. Color is too often seen as peripheral," Rosbottom insists.

As the durability and cost-effectiveness of concrete make it increasingly popular for interior floors, architects are looking for ways to upgrade its appearance. Chemically reactive stains can be used to color newly cured concrete or to rehabilitate and update existing slabs. Courtesy L. M. Scofield.

Prosperity manifests itself in richer, textured designs with greater depth and complexity, Rosbottom contends. But even in austerity, customizeable, textured finishes can provide elegant solutions.

St. Paul's Walker Art Center was in the midst of a fund drive for a planned $90 million expansion in 2001 when the U.S. economy came untracked. In place of natural stone, Herzog and de Meuron opted for a austere EIFS cladding system, but textured the exterior with a relatively new combination finish in which an initial 1-mm-aggregate texture is topped by a finer finish. The result is a seamless surface similar in appearance to limestone, but which looks almost marbelized. The finish gives Walker a look of permanence, even elegance, at a cost considerably less than the cost of stone.

The Walker's new wing, scheduled to open in 2005, will nearly double the size of the facility and incorporate four new galleries, a 385-seat theater, a restaurant and, most importantly, a meandering concourse dotted with seating, conversation nooks and new-media bays that Kathy Halbreich, Walker's director, hopes will be as magnetic as traditional town squares.

Creative surface coatings are undergoing great popularity, says Rosbottom, "and their special character helps define a room's atmosphere."

Trendiness vs. timelessness

Lewis Dominy, AIA, president of Dominy + Associates, a 23-person design firm in San Diego, has found an unusual niche. Church design and restoration accounts for three-quarters of the firm's volume. The lesson Dominy has learned is one that applies to all disciplines and markets: "trendiness," he says, is to be avoided at all cost, in favor of "timelessness."

To date, Dominy has worked on 120 churches, mostly in Southern California, occasionally in Arizona and New Mexico. He says he has learned to guess, before being told, the date of a church's last restoration.

> **…trendiness is to be avoided at all cost, in favor of timelessness.**

"Colors and patterns define the period," Dominy says. "The churches of the 1970s were dominated by orange colors; those of the 80s, by mauve. We now try very hard not to be too strong with color. As a rule, the more permanent the element the more neutral we are with color."

"In the current issue of *Faith and Form* (the magazine devoted to religious architecture)," says Dominy, "is an article studying Richard Meier's Jubilee Chapel in Rome, a display of travertine and white. It is gorgeous in its simplicity. That is sometimes the hardest thing to do."

At the Solana Beach Presbyterian Church in San Diego, Dominy is using cream-colored Brazilian tile with verde green accents to create a 6,000 sq. ft. pinwheel pattern on the floor that is the focal point of the sanctuary. "We looked at slate and a number of other materials," he says. We decided on porcelain tile for a number of reasons: First of all, tile permits you to have very small grout joints. It is also extremely hard. It is durable and it has a lot less 'texture' than natural materials. All those elements make tile very attractive from a maintenance standpoint.

Polished porcelain tile. Courtesy Portobello.

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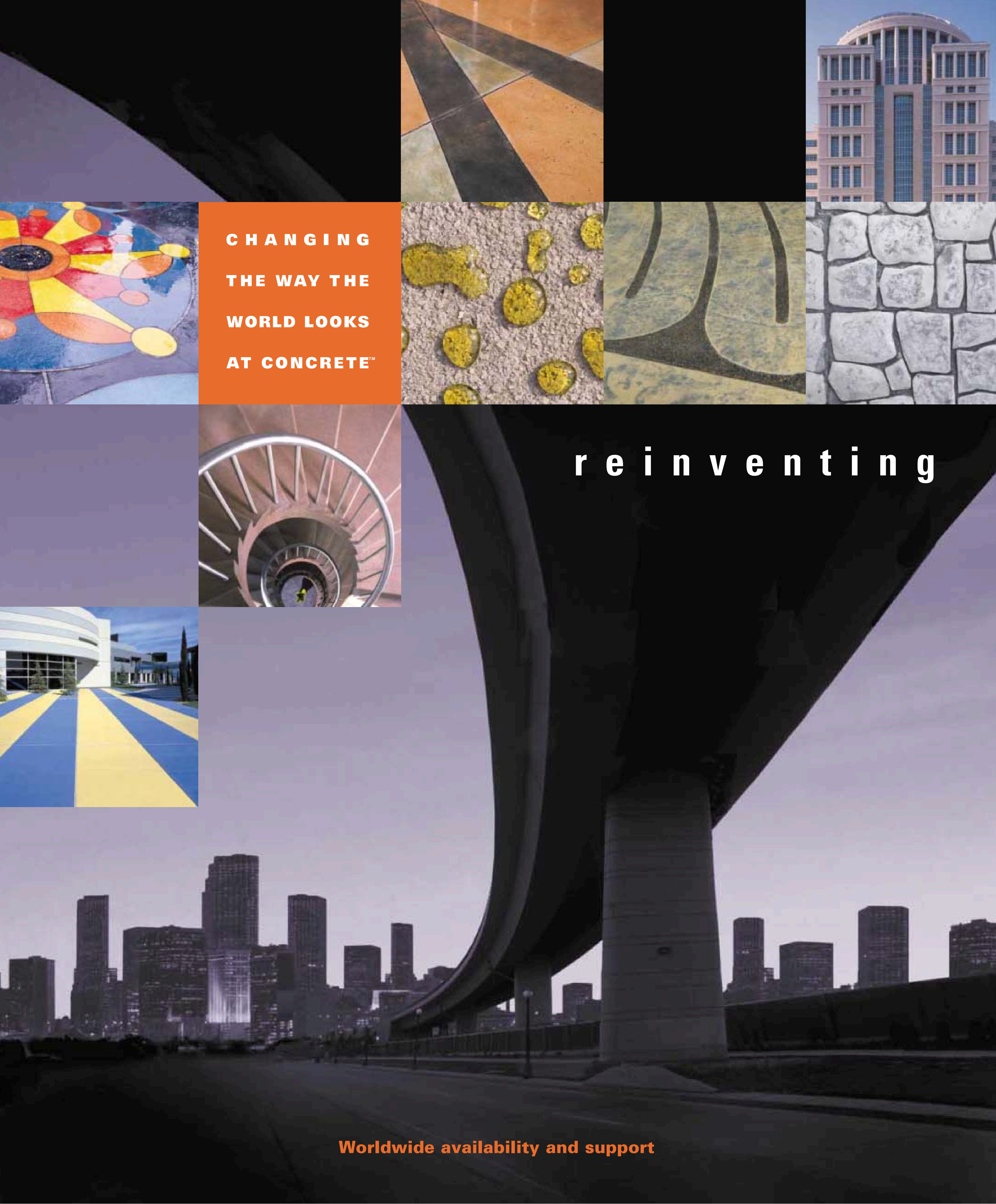
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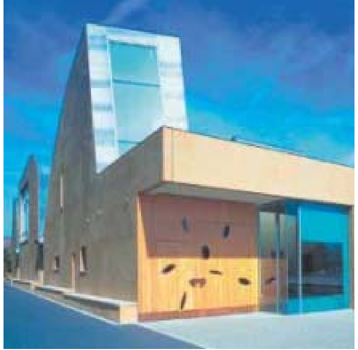

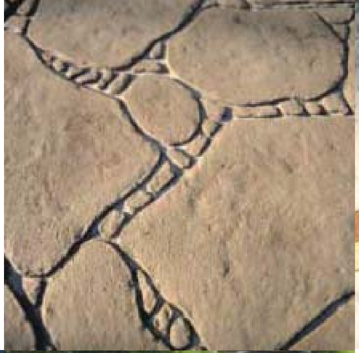

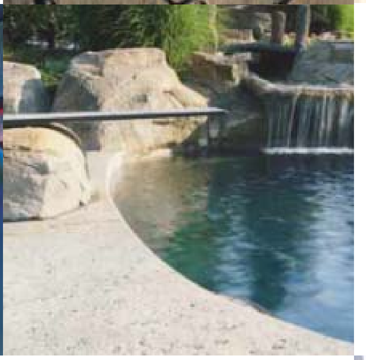

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"Our energy laws here in California also allow us energy credits for using tile. When used on southern exposures, it acts as a heat sink," Dominy says.

"It's important to note that there are different types of porcelain, including dishes and dolls, which can be very fragile," says Carl Harris, director of the architectural division of tile manufacturer, Portobello America.

Tile and stone application. Courtesy LATICRETE.

"However, when we speak of porcelain tile used in both residential and commercial applications, we are speaking of a product that uses selected clays and other minerals such as kaolin (a clay hardener) and feldspar that create, through the manufacturing process, a very tough and long-lasting product."

"Ceramic tile otherwise known as 'Gres' tile uses different clays and manufacturing processes that do not create as durable or as long-lasting a product. Generally, porcelain tile is significantly harder than even natural stones such as granite and certainly marble," Harris says.

"Typically, tile manufacturers are able to combine two to four shades of color in any given tile. New manufacturing processes enable us to now incorporate up to eight shades within a single tile—the end result being a greater breadth and depth of color and the ability to replicate with exactness the appearance of natural stone," Harris says. "Many of the new tiles are named after natural stone, and you can't tell the difference between tile and stone."

Harris says a survey of 1,000 architectural specifiers and principals conducted early last year revealed that 78 percent of architects make no distinction between ceramic and porcelain tile.

"That surprised me," he says. "In the manufacture of porcelain tile, the material is compressed to 450 tons/sq. in., making porcelain incredibly dense, durable and almost wholly impervious to water. Porcelain outperforms ceramic in every area. Pour water onto the back of a ceramic tile and it will absorb a great amount; pour water onto the back of a porcelain tile and it will bead up. Its absorption rate is less than one percent."

New colors, new materials, new looks

Such is the influence of color, that the glass division of PPG Industries has built a marketing campaign and modified its architectural glass product line to bring to mind the myriad moods of the sea.

Its four-color collection of spectrally selective glasses is designed to provide color options and at the same time improve thermal performance.

Spectrally selective glass generally has a light to solar gain ratio (LSG) of 1.25 or higher. LSG is the ratio of solar heat gain coefficient (SHGC) to visible light transmittance (VLT). Spectrally selective glass allows more visible light into a building while reducing heat gain.

Manufacturers in general are achieving tremendous color effects…

Thomas O. Gray, AIA, of Pittsburgh-based IKM, Inc., says the distinctions between "green architecture" and conventional architecture are slowly disappearing and that spectrally selective glass, once relatively uncommon, is now gaining broad acceptance by the architectural community.

'Not only are these products very attractive, but they have very good solar performance characteristics and can be coupled in a thermal unit with low E coatings to further enhance their performance,' says Robert Struble, PPG flat glass division communications manager.

"The new possibilities are seemingly endless," says Jay de Sibour, senior account manager for the New York-based Material ConneXion. 'We are seeing new polymers every day and, because of materials technology advances, new applications for many existing materials.

"Manufacturers in general are achieving tremendous color effects," says de Sibour, "whole new looks through methods like pearlescence, flourescence, interference colors that change with the source of light—all sorts of new effects; people are incorporating them into any number of materials to create differentiation. Fiber optics are another fascinating design medium, being incorporated in a variety of new applications."

The newest generation in colorful field-applied fluoropolymer coatings, allows the weathered exterior of Torregia in Monterrey, Mexico, to shine with a vibrant red. Courtesy PPG Glass.

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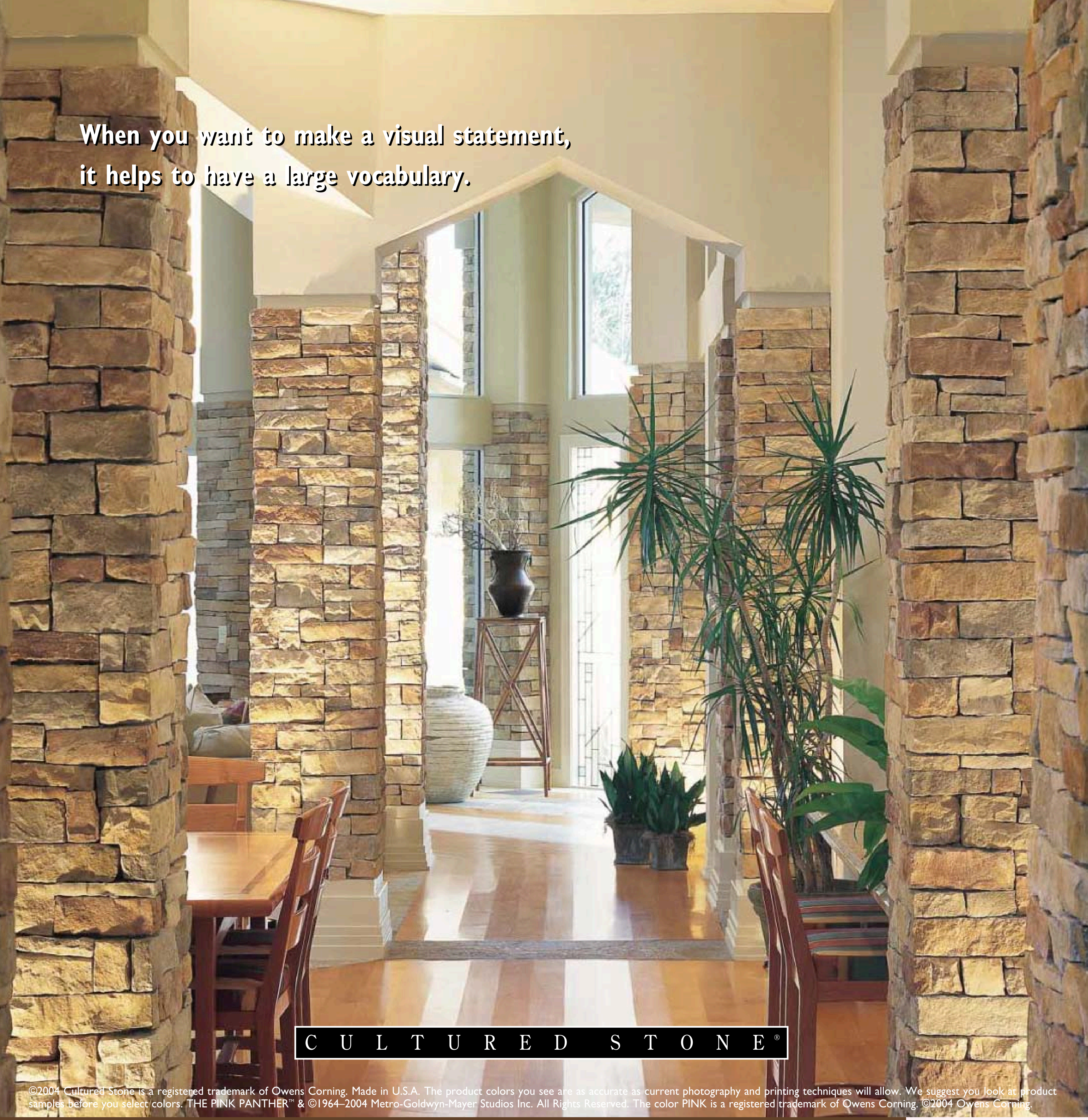
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Concrete floor in the atrium of the Monsanto Center for Research at the Missouri Botanical Gardens in St. Louis. Courtesy L. M. Scofield.

From real to surreal

LED lighting displays are among the most potentially influential of the new design technologies, says Seattle-based color consultant, and CMG member Leatrice Eiseman, author of *Colors for your Every Mood*.

"It's astonishing to me how many new applications are emerging incorporating LED lighting since it was incorporated into the (Ellerbe Becket-designed) Target headquarters building in downtown Minneapolis," Eiseman says.

"The luminescence LEDs provide, especially now that the color blue has crept from the automotive industry to more general uses, is captivating," she says.

"In health care, we are seeing designers using special effects and colors in a variety of new ways," says de Sibour. "The new children's wings are incorporating interactive materials: thermochromatics that change color with touch, reticulars and holograms. We have taken an intimidating environment and made it enjoyable, distracting, interactive. Pediatric health care has become a playground.

"Look at the use of interference colors," he says. "We've seen metallic cars with colors that change for a long time. Now we're seeing that move into kitchen appliances and table tops."

At this summers NEOCON World's Trade Fair, the hit of the show was a yet-to-be-released, color-shifting, hologram-like surface that can appear violet from one angle, a silvery blue from another.

But what makes the product—due to be available in 2005—especially appealing, says Tony Sain, Lonseal, Inc., is a UV surface finish that gives the line its name and which makes the flooring as easy to clean as wiping a whiteboard clean.

The ease of maintenance, Sain says, is achieved by applying a 100-micron-thick, UV-cured, urethane wear layer on top of the traditional PVC wear layer used by nearly all manufacturers. The result, he says, is a "gorgeous, high-design flooring that is also highly durable that can take traffic and from which scuff marks can be wiped away with incredible ease."

The trend toward color-shifting surfaces will become pervasive in the coming year, Sain predicts. "In our industry you also are seeing other innovative applications, especially advances in embossing technology which will have some fascinating new looks."

The flooring in Borruso's Fornarina store in Mandalay Place is another new product, a flooring line with a bumpy texture that some users say feels as though they were walking on "a bed of pearls."

Sain says Lonseal has tested and is considering the launch of a wall-covering line.

"Retail design has become very exciting, and it is pulling other markets along with it," Sain says. "Even institutional design, in reality, is becoming very high design, not just dull gray surfaces anymore, but floors with wood-grain, interiors, overall, that have the look and feel of nature."

Stone, whether natural or cultured, is an attention-getter, the likely focal point of any project.

Stone, whether natural or cultured, is an attention-getter, the likely focal point of any project. The "look" and "feel" of nature was also the goal of early cultured stone manufacture, which has become one of the fastest-growing niche industries in construction. Today, cultured stone is available in dozens of "textures," and more than 120 colors that no longer merely mimic nature, but use it as a starting point for more fantastic creations.

"We started out making replicas of stone that had either grown too expensive to be practical to a wide audience or became rare because quarries were either depleted or shut down," says Bob Heath, former president of Cultured Stone, now vice president of marketing for Owens Corning's Cultured Stone division.

"But we've evolved way beyond that," says Heath. "Today's new products are designed to meet specific demands for a size and shape and color and go far beyond what is available in nature."

In fact, Owens Corning's two most popular colors are colors that don't exist in any quarry, says Heath. One is a color combination created from a blend of more than a dozen colors and can be blended to match a builder's specific needs. The other, once exclusively a ledgestone, is now available in a variety of textures and a nearly unlimited range of colors. ■

CLICK FOR ADDITIONAL REQUIRED READING

The article continues online at:

archrecord.construction.com/resources/conteduc/archives/0408color-1.asp

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LEARNING OBJECTIVES

- *Have a better sense of the trends in color and textures in design.*
- *Know the materials that can be used to achieve desired color and texture.*
- *See the trends in color and texture in various project types.*

INSTRUCTIONS

Refer to the learning objectives above. Complete the questions below. Go to the self-report form on page 246. Follow the reporting instructions, answer the test questions and submit the form. Or use the Continuing Education self-report form on *Record's* website—*archrecord.construction.com* —to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

QUESTIONS

1. Spectrally selective glass generally has a light-to-solar-gain ratio (LSG) of:
  a. .25
  b. .40
  c. 0.75
  d. 1.25 or higher

2. Porcelain tile generally achieves its hardness through use of:
  a. engineered polymers
  b. kiln firing at 980 degrees
  c. kaolin and feldspar
  d. cementitious additives

3. Gensler has sought inspiration for design in:
  a. a study of butterflies
  b. ocean and air currents
  c. both of the above
  d. neither of the above

4. The Material ConneXion says new designs are being created through all but which of the following:
  a. pearlescence
  b. flourescence
  c. iridescence
  d. interference

5. Churches of the 1970s, Lewis Dominy says, were characterized by:
  a. orange colors
  b. a predominance of avocado refrigerators
  c. undersized naves
  d. the absence of pews

6. A distinctive feature of the new Minneapolis Target headquarters is:
  a. faux limestone balustrades
  b. LED lighting
  c. its titanium exterior
  d. Asian marble cladding

7. A new UV line of flooring takes its name from its resistance to ultraviolet rays.
  a. true
  b. false

8. The two most popular colors of cultured stone are:
  a. Berkshire Limestone and Sierra Nevada Redstone
  b. Sangre de Christo Red and Sassuolo Marble
  c. Colors that don't exist in nature
  d. Litho Gray and Allegheny Ash

9. Generally speaking, aggressiveness is associated with what color?
  a. red
  b. pink
  c. black
  d. yellow

10. Ceramic and porcelain tiles are very similar in density.
  a. true
  b. false

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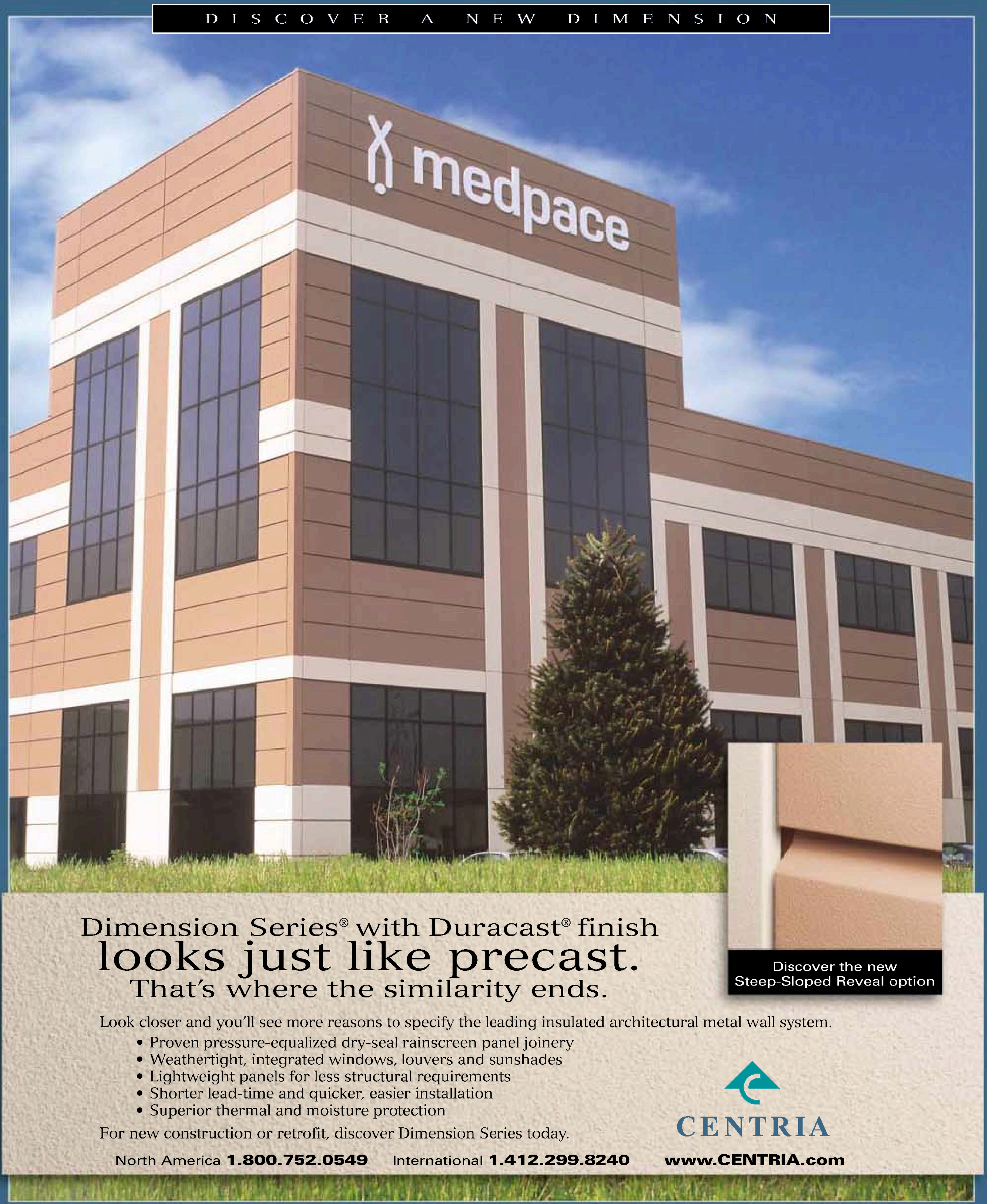

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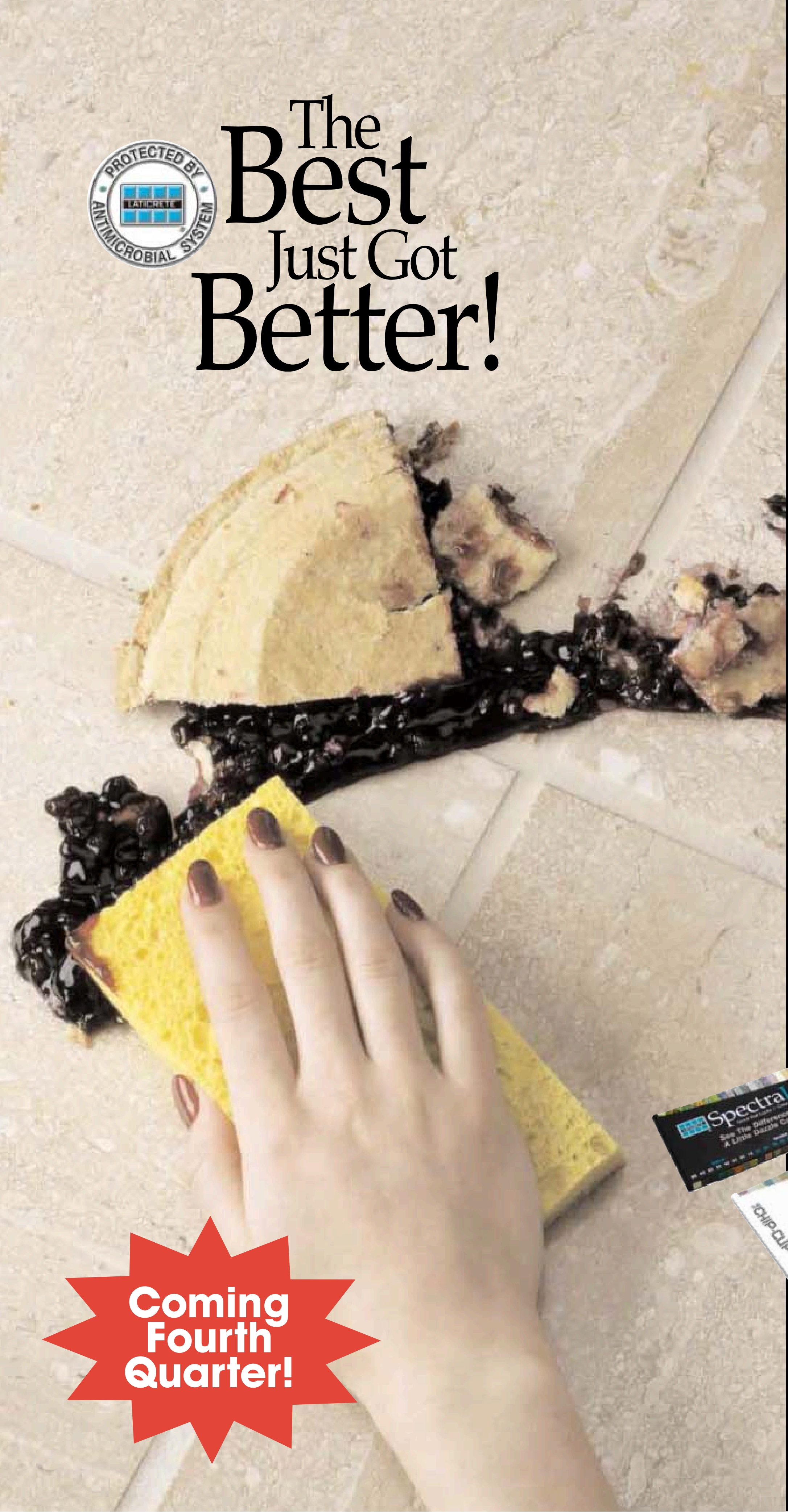
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Environmentally-Friendly Building Strategies Slowly Make Their Way Into Medical Facilities

NEW GUIDELINES HIGHLIGHT THE RELATIONSHIP BETWEEN SUSTAINABLE DESIGN AND HUMAN HEALTH

By Nancy B. Solomon, AIA

First, do no harm.” This has been the motto of the medical profession since Hippocrates. Yet, over the past few decades, it began to appear as if the purchasing habits, facility operations, and, ultimately, building design standards of this sector might not always be consistent with its own professed values. While practitioners may be providing state-of-the-art medical treatment to the sick, some of their products, systems, and structures may be compromising the overall health of their patients, staff, and outlying community.

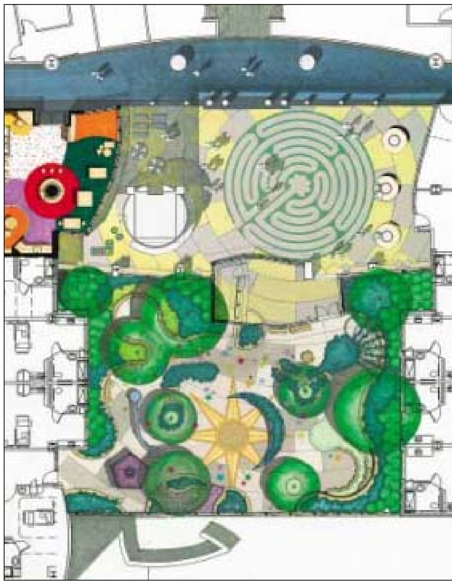
Children’s Hospital of Pittsburgh (above), designed locally by the architecture firm Astorino, includes a vast garden (below). It is one of a few health-care facilities in the U.S. seeking a high LEED rating.

The warning signs came as early as the 1980s, when used syringes washed up on Long Island and New Jersey beaches. Because of fears of infectious-disease transmission, medical waste soon began to be segregated and burned. But in 1996, the U.S. Environmental Protection Agency (EPA) deemed incineration of medical waste to be the largest contributor of dioxin, a potent carcinogen, into the environment. The incinerators also released mercury, another serious threat to public health. In response to the incineration problem, Health Care Without Harm (www.noharm.org), a coalition of health-care, environmental, and community groups, was formed at this time to work toward reducing the industry’s environmental impact. Due to stronger EPA pollution controls, most medical-waste incinerators have since ceased operation. Hospitals also began to look at other ways to minimize toxins and waste. In 1998, for example, EPA, in conjunction with the American Hospital Association (www.aha.org), began a program called “Hospitals for a Healthy Environment” to encourage the phasing out of mercury—from thermometers to fluorescent lamps—in health-care facilities by 2005 and the cutting of health-care waste by 50 percent by 2010.

Despite—or perhaps because of—these serious operational and purchasing concerns and subsequent large-scale initiatives, “health care is way behind the curve” when it comes to sustainable building design, reports Carol Antle, director of capital planning for Northern California for Kaiser Permanente in Oakland, California. With its own department of environmental stewardship, Kaiser has been trying to push the industry’s sustainable-design envelope.

The reasons for this are many. Health-care architect Robin Guenther, AIA, of Guenther5 Architects in New York, cites, among other causes, the size of the “environmental footprint” facing medical facilities. “Health care was not ready to go after the building until it got those other aspects, such as medical waste and mercury, in order,” she says.

Cost is also critical. In health care, very few building projects are adequately funded from the start, so there is always fierce competition for scarce capi-



Nancy B. Solomon, AIA, writes frequently about architectural technology.

CONTINUING EDUCATION

Use the following learning objectives to focus your study while reading this month’s ARCHITECTURAL RECORD/ AIA Continuing Education article. To receive credit, turn to page 188 and follow the instructions. Other opportunities to receive Continuing Education credits in this issue include the following sponsored sections: “From Translucent to Opaque: Accessing the Unique Design Dynamics of Glass Block,” sponsored by Pittsburgh Corning, page 193; and “Color and Texture,” multi-sponsored, page 154.

LEARNING OBJECTIVES

After reading this article, you should be able to:

1. *Describe the differing requirements of health-care and office buildings.*
2. *Explain the Green Guidelines for Healthcare Construction (GGHC).*
3. *List additional strategies for achieving environmental credits under GGHC.*

For this story and more continuing education, as well as links to sources, white papers, and products, go to ***www.architecturalrecord.com***.

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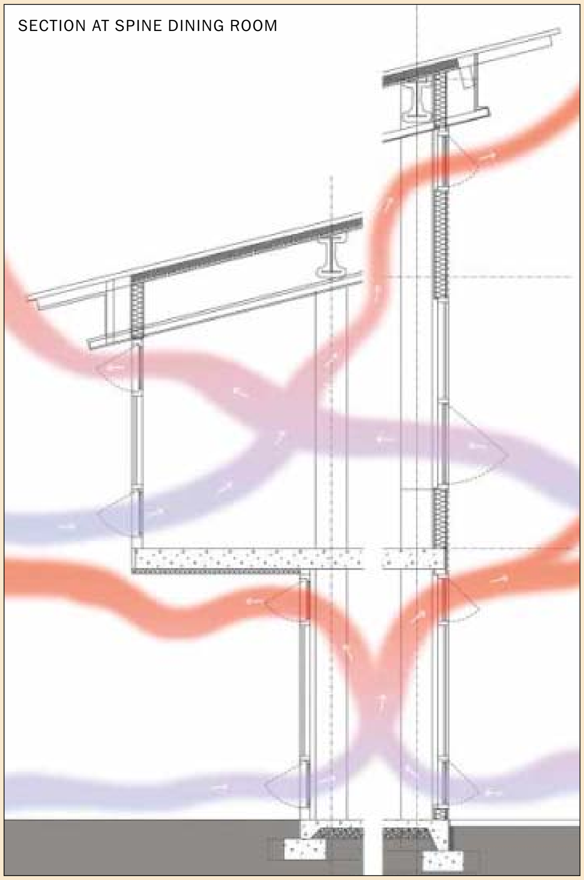
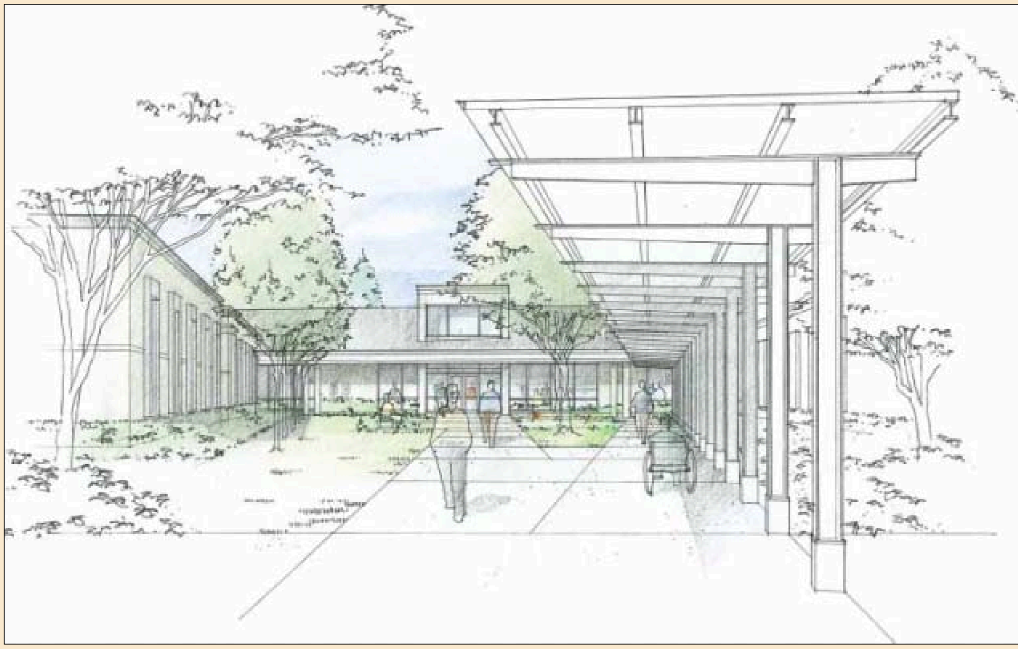


Veterans Skilled Nursing Facility, Retsil, Washington

NBBJ designed ceilings that are 12 feet 4 inches tall to provide ample room for an interior convective current to develop (diagram, left): Hot air rises, is cooled by the precast-concrete planks, and then drops back down. The high ceilings also allow for 8-foot-high, double-hung windows along one wall of each bedroom. Low-emissivity coated glass and installed interior roller shades reduce solar heat gain. Different types of exterior shading devices address particular solar conditions at various facade orientations.



tal dollars. There is a perception, although not always true, that sustainable strategies cost more up front. The fact that they may save money over the life of the building doesn't always sway decision makers: "If it's a trade-off between keeping the surgeon or the building-operations staff happy, the surgeon is going to win. Green initiatives can be vulnerable," explains Guenther.

Medical facilities are also highly regulated, so some hospital administrators and designers fear that environmental goals will become another layer of bureaucracy in a complex industry that is already burdened by many requirements.

In addition, the first version of the most popular rating system for sustainable design, the U.S. Green Building Council's (USGBC) Leadership in Energy & Environmental Design (LEED), was tailored to commercial construction, not health-care facilities. But hospitals, in particular, differ greatly from standard office buildings: They run day and night, seven days a week. They require multiple adjacencies, which traditionally necessitates compact floor plates. They require habitable spaces for procedures that would be adversely affected by natural light. They have to accommodate large equipment in significant quantities. And they need more frequent air changes and more rigorous cleaning procedures to prevent the spread of infection. In one way or another, these and many other health-care-specific conditions affect how well the facility can achieve typical sustainable goals.

There are signs, however, that all this is beginning to change. Despite the admitted incongruity, 29 projects have now registered with LEED in the health-care category (including the Patrick H. Dollard Discovery Health Center, in Harris, New York, and Washington State Veterans Home Skilled Nursing Facility, in Retsil, Washington, described on these pages), as compared to none in 2000 when the rating system was introduced, and one hospital (Boulder Community Foothills Hospital, page 184) has already been certified at the silver level. "Overall, there is an enormous interest in sustainability within the health-care industry. And the interest is growing exponentially," observes Guenther.

DESPITE THE ADMITTED INCONGRUITY, 29 PROJECTS HAVE NOW REGISTERED WITH LEED IN THE HEALTH-CARE CATEGORY.

Even more promising is the soon-to-be released Green Guidelines for Healthcare Construction (GGHC). Developed by a committee under the auspices of the American Society for Healthcare Engineering (ASHE), an affiliate of American Hospital Association, these guidelines address sustainable criteria specific to health care. Gail Vittori, codirector of the Center for Maximum Potential Building Systems, in

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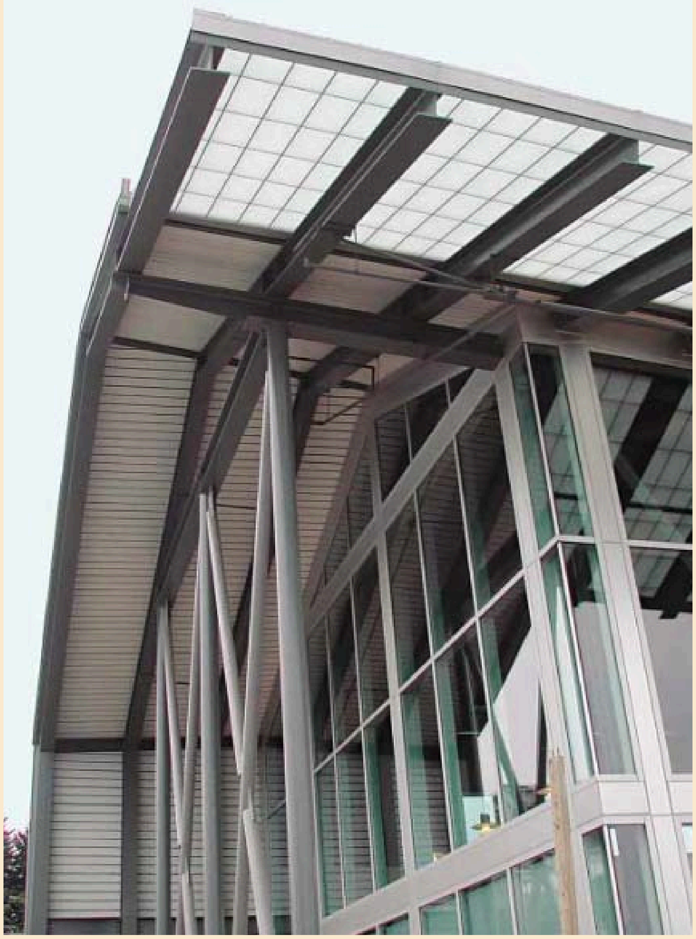

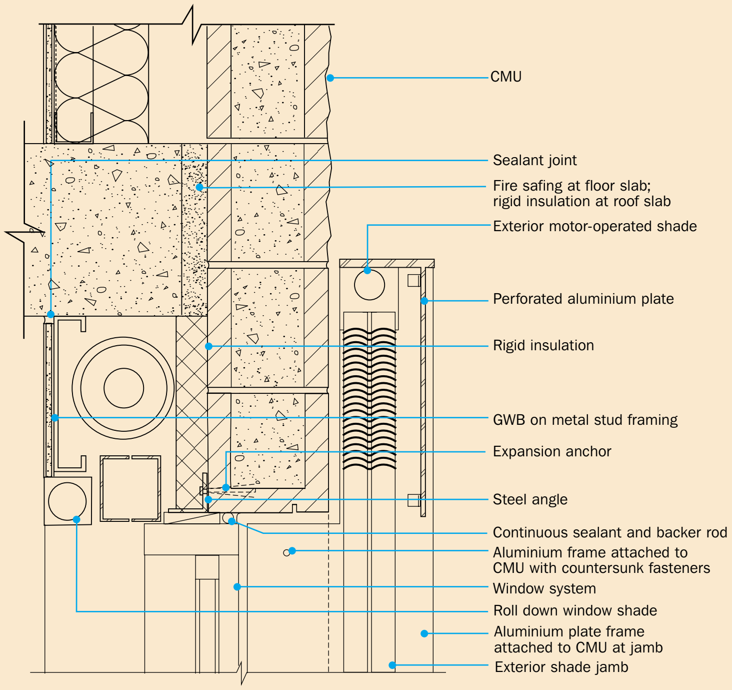
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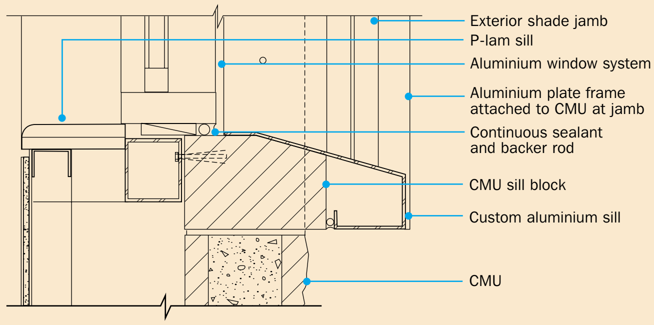
RESIDENT WINDOW HEAD


Exterior shade jamb
P-lam sill
Aluminium window system
Aluminium plate frame attached to CMU at jamb
Continuous sealant and backer rod
CMU sill block
Custom aluminium sill
CMU

RESIDENT WINDOW SILL

Austin, Texas, chaired the group of sustainable and health-care experts from around the country. The organization of the Green Guidelines follows very closely that of LEED for New Construction: It is divided into similar environmental categories, each of which has a few prerequisites plus a variety of strategies for credit.

But it is at the level of the strategies themselves that one begins to appreciate the differences. Some of the GGHC (www.gghc.org) categories include additional prerequisites. For example, "mercury elimination" is required in the "Materials & Resources" category and "asbestos removal or encapsulation" is necessary in "Environmental Quality," reflecting the fact that existing medical facilities have potentially harmful materials that need to be either removed or contained.

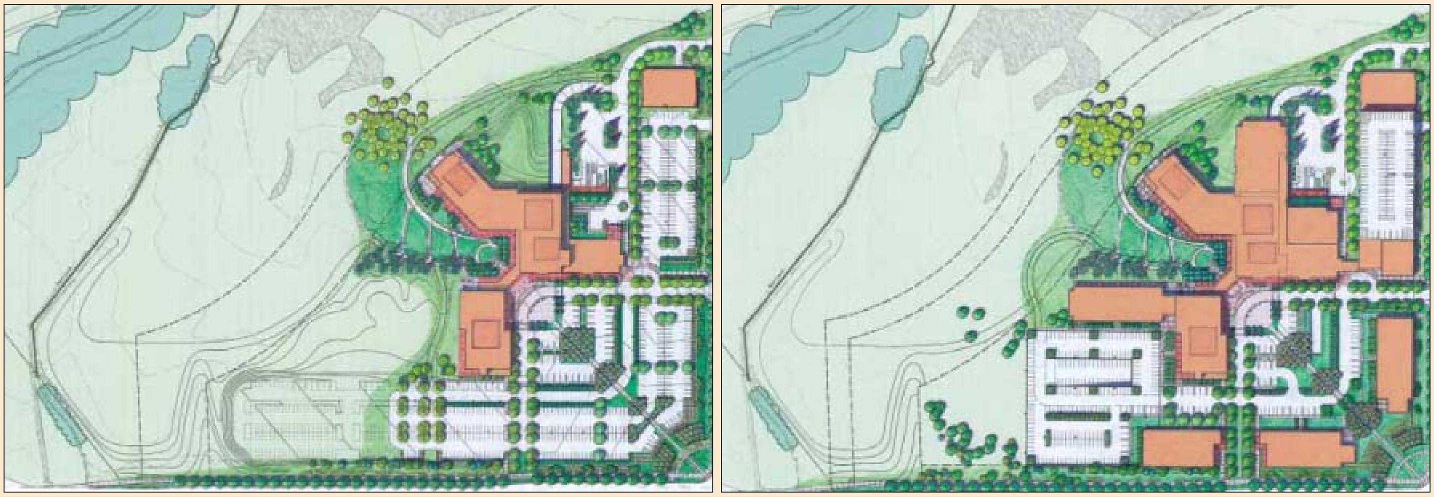
All categories have additional strategies: "Connection to the natural world," for example, has been added under "Sustainable Sites" to acknowledge the important role nature plays in healing. "Process water efficiency" has been inserted under "Water Efficiency" to reflect the fact that hospitals rely on nonpotable water in much larger quantities than potable water within the building itself. "Electronic purchasing and take back" has been included under "Materials & Resources" to encourage the recycling of hardware rather than allow equipment to enter the waste stream. And the elimination of "asthma triggers, formaldehyde, phthalates, and natural rubber latex" has been added as one of the credits for "low-emitting materials" within "Environmental Quality," highlighting the sensitivity health care has to people with compromised immune systems.

And some credits have been adjusted to more accurately reflect the realities of health care. For example, in "Energy & Atmosphere," GGHC gives credit for supplying 1 percent, 2 percent, or 5 percent of the total energy consumed with renewable sources, rather than the 5 percent, 10 percent, or 20 percent minimums stipulated by LEED, because health-care buildings are so energy-intensive. The Green Guidelines has also expanded the detailed descriptions of the credits. Most striking is the insertion of "Health Issues," which emphasizes the strong connections among ecological health, human health, and the built environment.

A voluntary, self-certifying system, GGHC could never serve the same role as does the LEED system of third-party certification. But its health-based approach adds a rich layer of information to the original LEED structure. "We wanted to be explicit that all of these strategies have health implications," explains Vittori. "It's a product that puts human health front and center." In doing so, ASHE believes the health-care industry will be even more motivated to provide high-performance healing environments to complement its high-performance medicine. Perhaps equally important, such an emphasis on the health-based benefits of sustainable solutions promises to advance the entire sustainable-design movement in all sectors of construction.

Boulder Community Foothills Hospital, Boulder, Colorado

Boulder Associates and Oz Architecture minimized the amount of water needed for exterior use, in large part by specifying plantings that are native to Colorado (above) and other semiarid regions. Fifty-five percent of all building materials were manufactured locally, of which more than half were also harvested locally. A master plan for the existing 49-acre greenfield site (below left) emphasized carpooling, thus reducing paving to 75 percent of the parking area normally required (below right).



PHOTOGRAPHY: © SERGIO BALLIVIAN PHOTOGRAPHY (TOP TWO); RENDERINGS: COURTESY BOULDER ASSOCIATES (BOTTOM TWO)

Last spring, spurred on by the groundwork already laid by the draft version of the Green Guidelines, USGBC established a committee, also chaired by Vittori, to develop a LEED Application Guide for Healthcare. GGHC will be a reference document in this process. According to USGBC, this guide will be available by next summer.

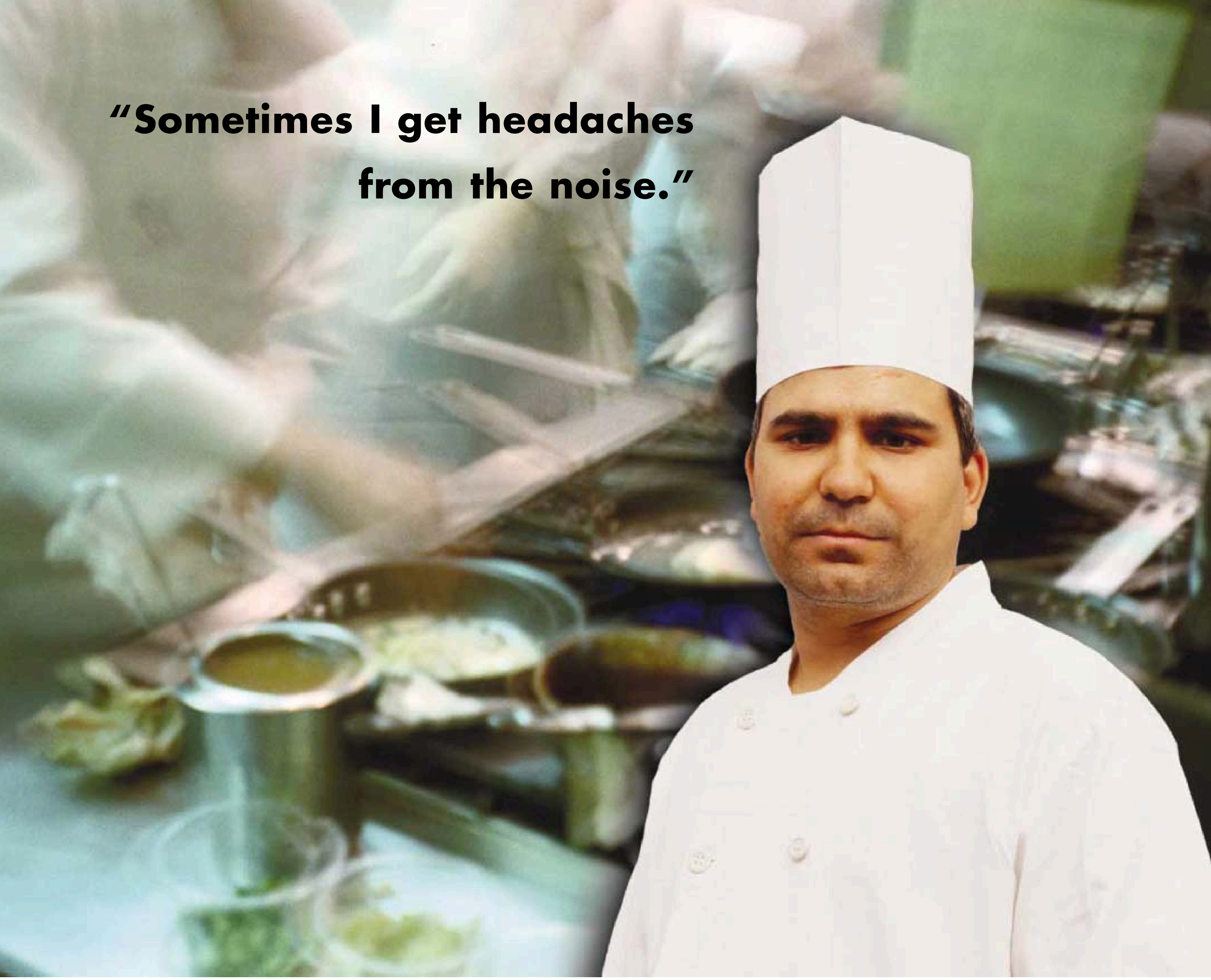
Thermal comfort

When the Washington State Department of Veterans Affairs first approached Seattle-based NBBJ regarding a replacement skilled nursing facility on its existing campus in Retsil, Washington, the agency wasn't focused on sustainable design. The department simply wanted a high-quality structure that would provide the best care. To this end, the client and architecture firm undertook strategic planning sessions with current residents to elicit what they really needed. The overarching themes that emerged were dignity, privacy, and a greater sense of control over their lives. "They wanted to be able to make individual choices, such as operating windows," explains NBBJ project manager Elizabeth Jacks. They didn't want air-conditioning, as it made them feel cold.

So, when the design team began to assess site conditions, the concept of natural cooling logically arose. After all, the campus is located in a mild climate atop a bluff next to Sinclair Inlet. Breezes coming across the water assure a constant flow of cool air all year round. What better way to give the residents more control over their environment and a connection to the outside world then by allowing them to tap into this natural resource as they saw fit?

There was, however, one glitch: All health-care facilities in the state of Washington must meet the Washington Administrative Code (WAC 388-97), which references ASHRAE 55. This standard requires mechanical cooling—regardless of microclimate—and stipulates that all patient areas must not exceed 75 degrees for 97.5 percent of the year. Although ASHRAE is now working on a standard for natural ventilation, and LEED has a much different understanding of the acceptable range of thermal comfort, the designers had to work with the code as it now stands.

NBBJ accepted the dual challenge of first meeting the temperature requirements—which far exceed LEED standards—with passive-solar strategies and then demonstrating that such a solution satisfied the intent



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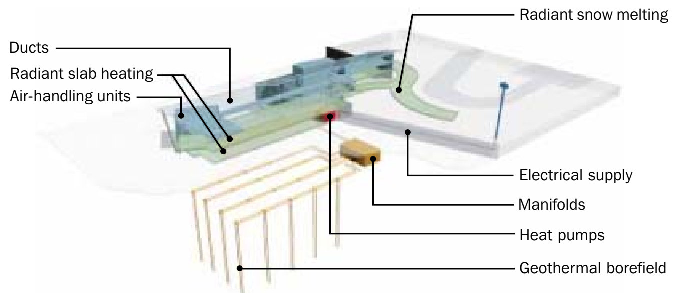
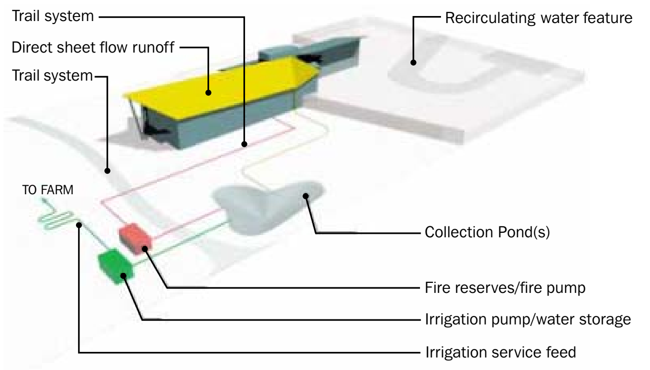
Patrick H. Dollard Discovery Health Center, Harris, New York

Guenther5 Architects incorporated many sustainable strategies, including testing nonchlorinated plastic floor tiles in another building to determine ahead of time how the product would perform on radiant slabs. The ground-source heat-pump system was the only energy-reduction strategy that had a measurable effect on the overall cost. The building uses about 25 percent less energy than does a standard facility of this type, resulting in savings of approximately $18,000 to $20,000 per year (diagrams, right).


Ducts
Radiant slab heating
Air-handling units
Radiant snow melting
Electrical supply
Manifolds
Heat pumps
Geothermal borefield

ALTERNATIVE ENERGY DIAGRAM
(Ground source heat pumps with integrated systems)


Trail system
Direct sheet flow runoff
Trail system
Recirculating water feature
TO FARM
Collection Pond(s)
Fire reserves/fire pump
Irrigation pump/water storage
Irrigation service feed

SITE RESTORATION DIAGRAM
(Stream flow management)

of the health-care code. Both the design and the final proof relied heavily on computer modeling of thermal conditions.

The facility consists of eight residential wings, one administrative wing, and a two-story connecting spine containing various communal functions. Cooling throughout the facility depends on the careful orchestration of various elements, including concrete structural systems for thermal mass, generous floor-to-ceiling heights, well-conceived window designs and placements, high-performance glazing, and appropriate shading devices.

The team did not eschew all mechanical systems: The building, for example, is heated with a two-pipe hydronic baseboard system and has a minimal ducted mechanical ventilation system to meet basic health standards. Feeding building geometries, solar angles, actual daily temperatures, and other data into a thermal modeling program, the mechanical engineers painstakingly demonstrated, room-by-room, that the temperature would not exceed the WAC threshold. Both the client and design team clearly had faith in their strategies, as the construction-document phase was 90 percent complete, early site work had begun, and key components were being bid out when the natural ventilation exemption was finally granted by the Washington Department of Social and Health Services.

According to Carl R. Tully, AIA, senior associate at NBBJ, the additional up-front costs associated with the design and construction of this passive cooling system are partly offset by the reduction in mechanical equipment. He estimates that the remaining costs will be paid back by operational savings in eight to 10 years. Scheduled for completion in January 2005, the 170,000-square-foot, 240-bed skilled nursing facility is aiming for LEED certification at the silver level.

Treading lightly on the land

The Boulder Community Foothills Hospital is a new medical center for women and children on the outskirts of Boulder, Colorado. The facility,

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DIAGRAMS: COURTESY GUENTHER5 ARCHITECTS (RIGHT TWO)

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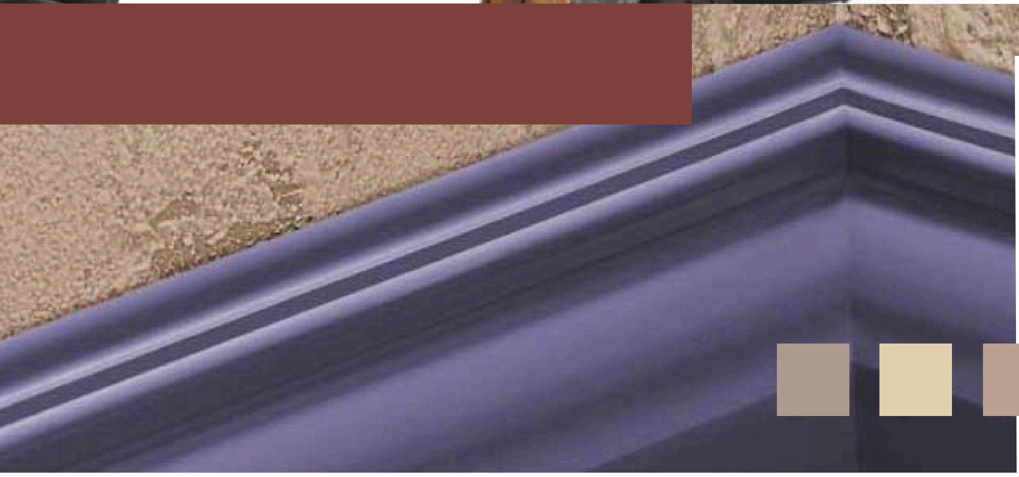

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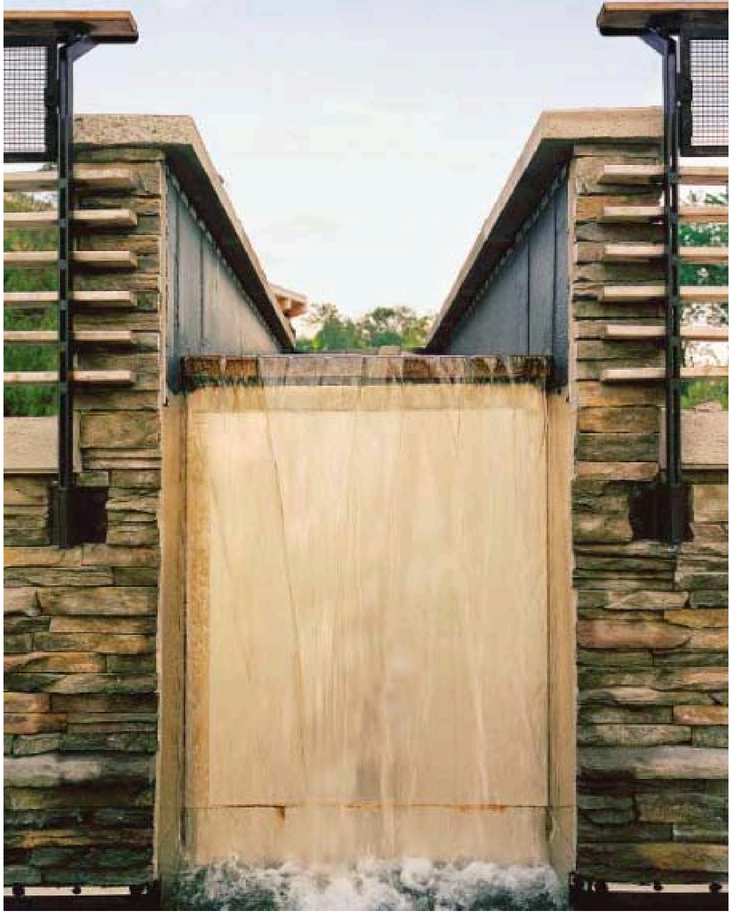

At the Discovery Health Center, rainwater flows into a trough (above), which is both an irrigation system and a holding tank for the fire-suppression system.

which currently includes a 154,000-square-foot, 60-bed hospital and a 67,000-square-foot outpatient-services building, opened its doors in September 2003. The first hospital to receive LEED certification, it was awarded a silver rating by the U.S. Green Building Council in December 2003 and received an honorable mention in the 2004 ASHE/AIA Vista Sustainable Building Awards program.

The board of directors of Boulder Community Hospital, which has been centrally located in the city for decades but began expanding in the 1980s with satellite campuses to serve an ever-growing suburban population, knew they wanted a green building when they hired the design team. City government and a few local organizations had already undertaken environmentally-friendly construction programs, and the hospital administrators felt that they should, too. Oz Architecture handled the core and shell of the building, while Boulder Associates was responsible for the medical architecture. Both firms are based in Boulder.

Although the 49-acre site was a greenfield—“it was the only property still available in Boulder that could accommodate such a facility,” explains Kristi Ennis, AIA, sustainable design director at Boulder Associates—the client pursued many other sustainable site strategies, including designating 32 acres of the campus as permanent open space.

Alternative transportation was emphasized. “The regional transit system is quite good,” explains Ennis, “and the client already participated in its annual bus-pass program, which allows all employees to ride free at any time.” The hospital invested in the construction and maintenance of a new bus stop, which the city’s transit department initially dismissed as unnecessary but soon took over its upkeep when it became evident that the shelter was well used. The designers also encouraged employees to share rides by designating parking spaces for car pools, and to either bike or walk by installing bike racks, showers, and changing facilities. Such strategies, in addition to the hospital’s current parking practices at its downtown campus, convinced the city to grant a deferred parking waiver at the new campus. This meant that the hospital only had to pave 75 percent of the parking area normally required, although it also had to set aside sufficient space for the additional parking in case it is ever needed in the future.

In terms of material selection, the architects aimed for multiple environmental goals. With the exception of mechanical and electrical components, 55 percent of all building materials were manufactured locally, of which more than half were also harvested locally. In terms of materials with either postconsumer or postindustrial recycled content, the architects significantly exceeded the amount suggested by LEED. And, although admittedly a challenge, they were able to identify low-VOC and formaldehyde-free products that also satisfied standard hospital requirements, such as high durability and easy cleaning.

The design team minimized the amount of water needed for exterior use, in large part by specifying plantings that are native to Colorado and other semiarid regions. As a result, the landscape design is expected to consume 50 percent less water than is typical of such campuses in the state.

Reduction of potable-water usage on the interior was more challenging, a common problem in health-care environments. Ennis explains that some alternative technologies, such as composting toilets, just do not seem appropriate for this building type. And in some situations, the staff can’t accept certain limitations. The postpartum nurses, for example, did not want an electric eye controlling a faucet where they were going to bathe newborns because they needed full control of water quantity and temperature. The design team did install waterless urinals and electric-eye faucets in the public-toilet rooms, but they couldn’t achieve LEED’s recommendation of at least a 20 percent reduction in overall interior potable-water use in comparison to levels stipulated by the 1992 Energy Policy Act. Ennis adds that state laws governing water rights in Colorado made that goal even more difficult to meet in this particular project.

A highly efficient central utility plant was built not just for the new hospital and outpatient building but also for additional development planned for the campus. Variable speed pumps and variable frequency drives ensure that energy needed to operate the heating and cooling systems are a function of actual demand. Many other energy-efficient components—from roof overhangs to occupancy sensors—were also incorporated. And the building was fully commissioned by a third-party agent to assure that all systems were running as intended. Based on calculations by DOE-2 software, the project uses 27.6 percent less energy than a building compliant with ASHRAE 90.1-1999.

REDUCTION OF POTABLE-WATER USAGE ON THE INTERIOR WAS MORE CHALLENGING, A COMMON PROBLEM IN HEALTH-CARE ENVIRONMENTS.

Health and the health-care environment

Established in 1948, the Center for Discovery is a not-for-profit health-care agency serving children and adults with severe and multiple disabilities. It provides a holistic range of therapies and educational opportunities to this population on two adjacent residential campuses near the Catskill Mountains in upstate New York. About 220 children and adults live on-site, another 60 adults live in nearby community residences run by the center, and about 500 people from the greater community take advantage of its day programs and services.

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Yet until recently, the center lacked a centralized clinic that could address all primary medical needs. Basic services were scattered across its properties, and many routine diagnostic and treatment procedures could only be obtained off-site. Transporting disabled residents—many of whom are confined to wheelchairs—as far away as Manhattan was inconvenient for the staff and stressful for the patients.

So, in 2000, Executive Director Patrick H. Dollard engaged Guenther5 Architects of New York in the design of an on-site ambulatory clinic. He didn't request a green building, but health-care architect Robin Guenther, AIA, who had been researching healthy materials for years and had recently been exploring geothermal heating systems, inquired if the center would consider alternative energy. The existing buildings ran off oil, but, says Guenther, "it was a year when everyone thought that oil prices were going to skyrocket." Needless to say, the client was intrigued. "So we started with energy," explains Guenther.

Incrementally, the design team began raising other environmental goals—from nontoxic materials to water-efficiency. It wasn't long before the executive director recognized that sustainable design was consistent with the organization's core values. The center had long believed that the environment contributed to the health of its patients, explains Guenther, but "the administrators had never really put it all together until the design of this building." With this new realization, the executive director decided that the proposed clinic should register with LEED, thus becoming the first health-care project ever to do so.

In health care, however, the client is not the only one who has to be convinced: The designs for Discovery Health Center had to be reviewed by New York State's Department of Health to ensure that the facility would meet the more stringent life-safety codes required for medical facilities and to receive approval for the cost of construction, which is governed in large part by reimbursement rates within the state.

According to Guenther, the Department of Health was concerned about establishing a statewide precedent for construction cost premiums for green features, so it undertook a rigorous financial review. The department initially rejected the idea of a geothermal system, despite the fact that it would pay for itself in 10 to12 years, because the technology would increase the total cost by almost 2 percent. Fortunately, New York State Energy Research and Development Authority offered a grant that reduced the premium to less than 1 percent, thereby shortening the payback period to a standard 3-to-5-year time frame.

The ground-source heat-pump system was the only energy-reduction strategy that had a measurable effect on the overall cost of construction. Energy savings were also achieved through a highly insulated building envelope, solar shading and daylighting techniques, and high-efficiency motors, fixtures, and lighting controls. The building uses about 25 percent less energy than does a standard facility of this type, resulting in operational savings of approximately $18,000 to $20,000 per year at current energy costs.

The 28,000-square-foot Patrick H. Dollard Discovery Health Center opened in April 2003. That same year, it became the first recipient of the Vista Sustainable Building Award, a program run by ASHE in conjunction with AIA's Academy of Architecture for Health. The firm is currently seeking LEED certification. ■

AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

INSTRUCTIONS

- **Read the article "Environmentally-Friendly Building Strategies Slowly Make Their Way Into Medical Facilities" using the learning objectives provided.**
- **Complete the questions below, then fill in your answers (page 244).**
- **Fill out and submit the AIA/CES education reporting form (page 244) or download the form at www.architecturalrecord.com to receive one AIA learning unit.**

QUESTIONS

1. Which design feature is good for office buildings, but not hospitals?
a. frequent air changes
b. compact floor plates
c. natural light
d. accommodation for large equipment

2. Which is a requirement for medical facilities regarding Materials & Resources?
a. electronic purchasing and take back
b. elimination of formaldehyde
c. efficient water processing
d. mercury elimination

3. Which is a requirement for medical facilities for Environmental Quality?
a. mercury elimination
b. asbestos removal or encapsulation
c. efficient water processing
d. electronic purchasing and take back

4. Which is a credit strategy for medical facilities under Sustainable Sites?
a. electronic purchasing and take back
b. connection to the natural world
c. elimination of formaldehyde
d. efficient water processing

5. Which is a credit strategy for medical facilities under Materials & Resources?
a. electronic purchasing and take back
b. elimination of formaldehyde
c. connection to the real world
d. efficient water processing

6. Which is a credit strategy for medical facilities under Environmental Quality?
a. efficient water processing
b. elimination of formaldehyde
c. connection to the natural world
d. mercury elimination

7. The connection between ecological and human health and the built environment is emphasized by the insertion of which category?
a. Energy & Atmosphere
b. Environmental Quality
c. Sustainable Sites
d. Health Issues

8. The issue of energy was a major concern in which project?
a. Dollard Discovery Health Center
b. Washington VA Skilled Nursing Facility
c. Boulder Community Foothills Hospital
d. U.S Green Building Council

9. Transportation was a major concern in which project?
a. Dollard Discovery Health Center
b. Washington VA Skilled Nursing Facility
c. Boulder Community Foothills Hospital
d. U.S Green Building Council

10. Operational windows was a major concern in which project?
a. Dollard Discovery Health Center
b. Washington VA Skilled Nursing Facility
c. Boulder Community Foothills Hospital
d. U.S Green Building Council

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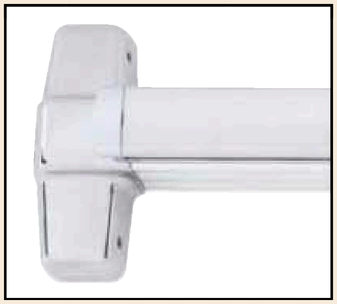

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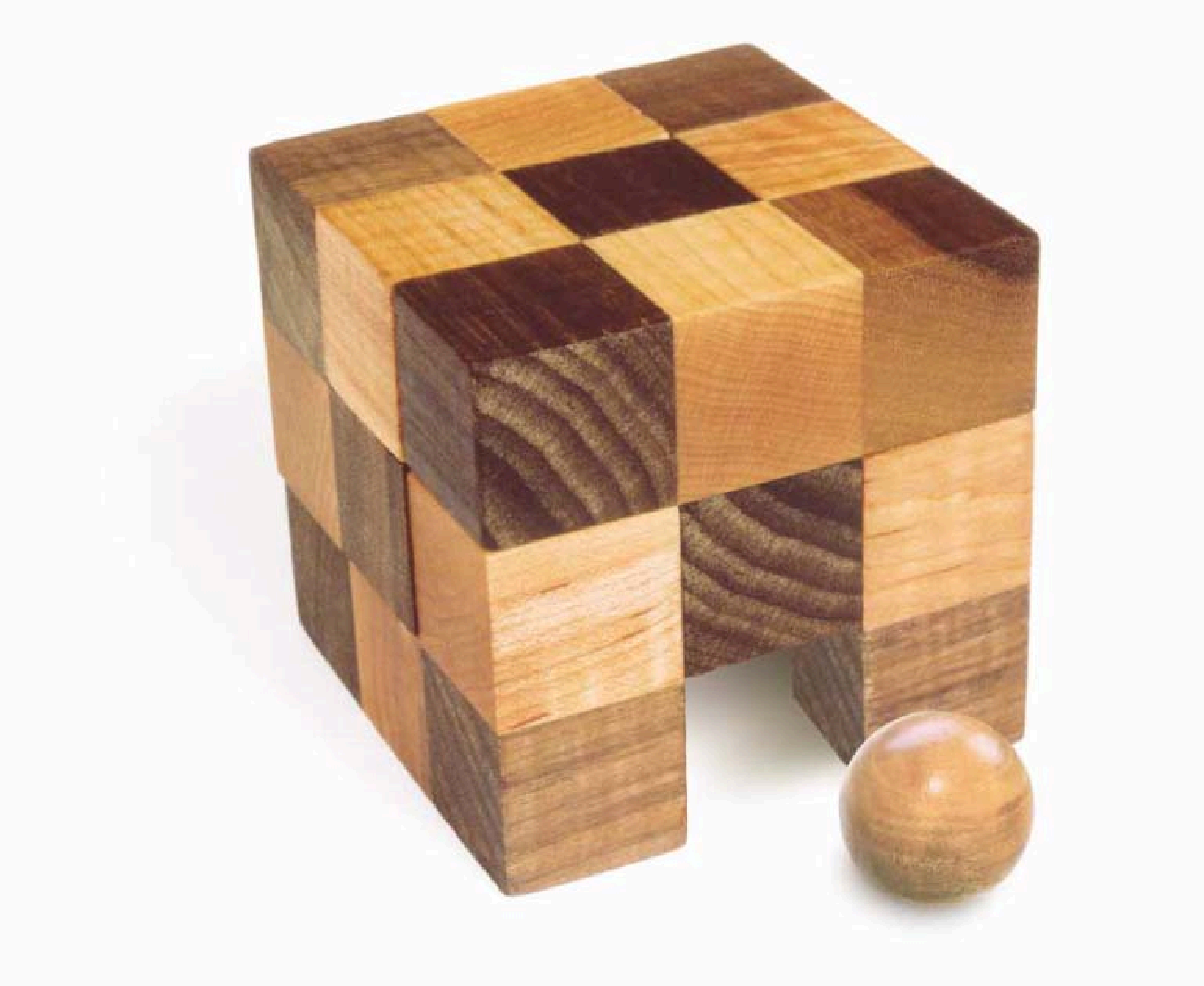

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Tech Briefs

Studies of their health impact heat up debate over halogenated flame retardants

In the future, Herman Miller's Eames lounge chair and ottoman (above) will use fabric free of PBDEs. These and other halogenated flame retardants have come under increasing scrutiny for negative health effects.

Concerns about the health and environmental effects of halogenated flame retardants, which are used in building materials, furniture, textiles, and electronics, have recently prompted calls for the compounds' phaseout.

Halogenated flame retardants, which contain bromine and chlorine—elements that are useful in suppressing fires—have been found to cause neurological, developmental, and reproductive damage, as well as other illnesses, in lab animals, and to persist in the environment. Recently, researchers have zeroed in on a class of flame retardants known as polybrominated diphenyl ethers (PBDEs), as a number of international studies by academic and government institutions have noted increasing levels of PBDEs in human breast milk. Of the various classes of PBDEs on the market, pentaBDE is commonly used in furniture and carpeting, octaBDE in electronics, and decaBDE—the top form produced in the U.S.—in electronics and textiles.

In the June 2004 issue of *Environmental Building News* (*EBN*), a newsletter published by BuildingGreen of Brattleboro, Vermont, executive editor Alex Wilson argued that the potential health and environmental damage caused by PBDEs and related chemicals warrant their elimination from the design, construction, and furnishing of buildings. "In looking at their history, I was astounded to find that one whole class of compounds had been banned in the 1970s, yet we didn't even consider that the replacement compounds might be quite similar chemically and toxicologically," he said in a phone interview. Wilson's editorial highlighted the hazards of PBDEs, and went on to caution that all halogenated flame retardants should be avoided pending rigorous life-cycle toxicity testing and proof of safety.

Growing body of evidence

Some furniture companies, in line with earlier commitments to sustainable design, have already begun seeking alternatives. Herman Miller and Interface have pledged to eliminate halogenated flame retardants from their products. In 2002, Steelcase wrote PBDE flame retardants out of its design standards for new products, and is weeding penta- and octaBDEs out of its product line, according to a company spokeswoman. Several furniture manufacturers are also participating in an EPA-led initiative to identify environmentally safe flame retardants. "It's a very complex topic, and it's important to do the right thing [on the basis of] valid information," said Randy Carter, Steelcase's principal engineer for codes and approvals.

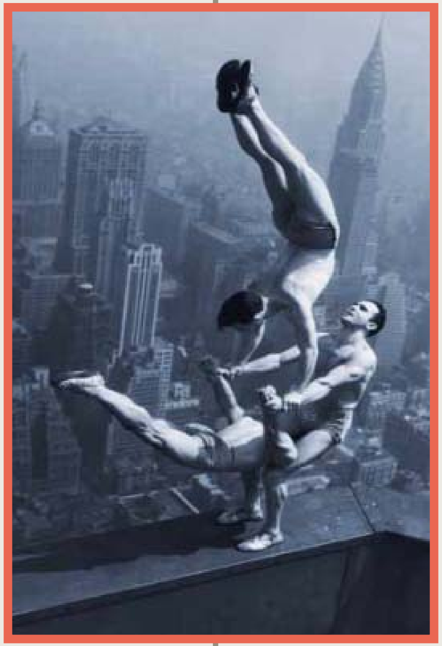
Regulators in the U.S. and Europe have stepped into the fray. The European Union has called for eliminating penta- and octaBDE, as have California and Maine, and New York is reportedly weighing restrictions on PBDEs as well. *EBN*'s Wilson notes that European fire-safety codes consider the toxicity of retardants, whereas U.S. codes don't. When EPA announced last November the voluntary phaseout of penta- and octaBDE by the Great Lakes Chemical Corporation (the only U.S. producer of the compounds), the agency issued a statement acknowledging that "there is growing evidence that the PBDE chemicals bioaccumulate and are persistent in the environment," and called for further study, but noted that the agency "has not concluded that PBDEs pose an unreasonable risk to human health or the environment."

The U.S. Green Building Council has yet to address halogenated flame retardants in its LEED rating system, although the group is open to pursuing the issue, according to vice president and LEED program director Nigel Howard.

Trade groups, however, maintain that PBDEs have not been proven hazardous as a group. "BuildingGreen's position is kind of a whitewash, because it doesn't differentiate between types of PBDEs," said Peter O'Toole, U.S. program director for the Bromine Science and Environmental Forum, a chemical industry group. The group has argued that while rising levels of penta- and octaBDE in the environment and in humans bear watching, another form, decaBDE, has yet to be proven unsafe. He cites a recent risk assessment by the European Union, and findings by the National Academy of Sciences, the Voluntary Children's Chemical Evaluation Program, the World Health Organization, and the U.S. Consumer Products Safety Commission, in making the case for decaBDE's safety. *EBN*'s editorial stated otherwise, citing a recent study from Sweden, among others.

However individual compounds are addressed in the near term, halogenated flame retardants are likely to remain under the microscope. *EBN*'s editors encouraged architects and builders to design in a manner that minimizes the need for flame retardants. Some of the strategies they outlined include encasing plastic-coated wiring in metal conduit, protecting foam insulation with fire-resistant barriers, using sprinklers more extensively, and replacing some plastics in construction with cements, metals, or ceramics. *Ted Smalley Bowen*

PHOTOGRAPHY: COURTESY HERMAN MILLER (TOP); THE U.S. FIRE ADMINISTRATION (BOTTOM)



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Glass block is a unique building material. It has a dynamic relationship with light — both natural and artificial. As light changes so do the material's appearance and the surrounding environment. A great range of light and privacy is available depending on the pattern and transparency of the glass block. Used creatively, this building material can produce dramatic aesthetic effects.

CONTINUING EDUCATION

Use the learning objectives below to focus your study as you read **From Translucent to Opaque: Accessing the Unique Design Dynamics of Glass Block.** To earn one AIA/CES Learning Unit, including one hour of health safety welfare credit, answer the questions on page 197, then follow the reporting instructions on page 246 or go to the Continuing Education section on *archrecord.construction.com* and follow the reporting instructions.

LEARNING OBJECTIVES

After reading this article, you should be able to:

- *Identify the structural properties of glass block when used as a building material.*
- *Understand the unique performance abilities of glass block, such as fire resistance, heat and light transmission, sound resistance, vandal resistance, and earthquake resistance.*
- *Grasp some of the economic and aesthetic implications of specifying glass block in specific building projects.*

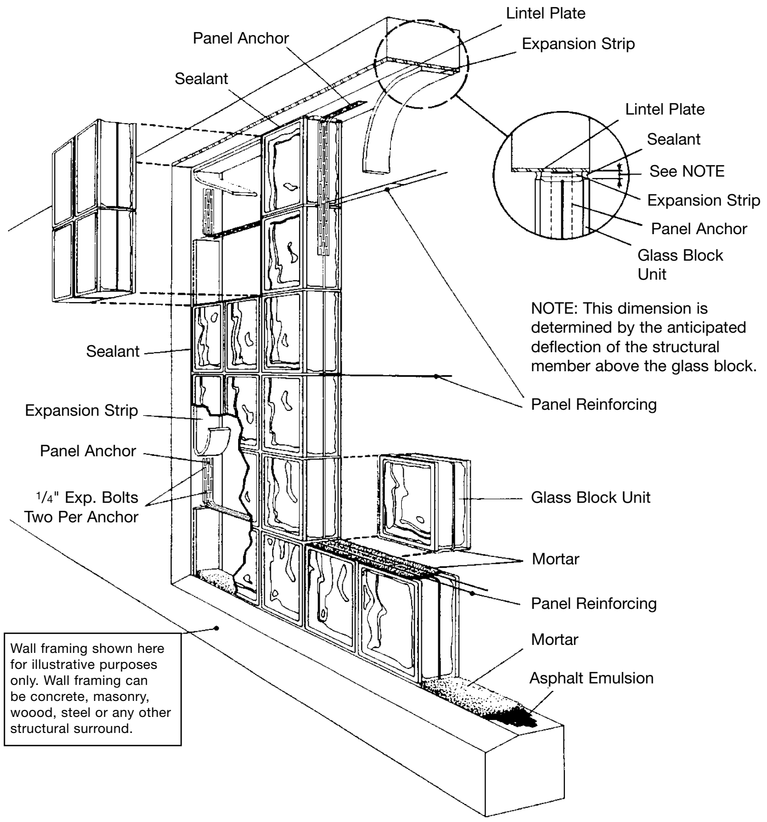
The transparency of light depends on the pattern, type, and size of glass block used. The result is maximum light transmission to increasing degrees of privacy, diffraction or refraction. Even with the most opaque block, or using glass blocks as accent pieces, the result is the same — a visual connection from inside to out, or connecting to inside spaces. This sensory stimulant offers more than just aesthetics — it is considered a necessary component of a psychological and physiological healthful living and working environment. This brick made of glass also provides energy efficiencies, sound control, security and even visual texture.

Glass block can be used in residential as well as commercial projects, as non-load bearing walls, windows, or partitions. An astonishing range of applications is possible with a corresponding variety of aesthetic results. Consider some interior uses: as a contemporary shower stall, a kitchen island, a backsplash in the kitchen, or as the sidelights at the front door. Yet, before building aesthetics and even design can be considered, it is crucial to become familiar with the technical properties of glass block. Working with glass block requires a certain level of skill and a thorough understanding of the material.

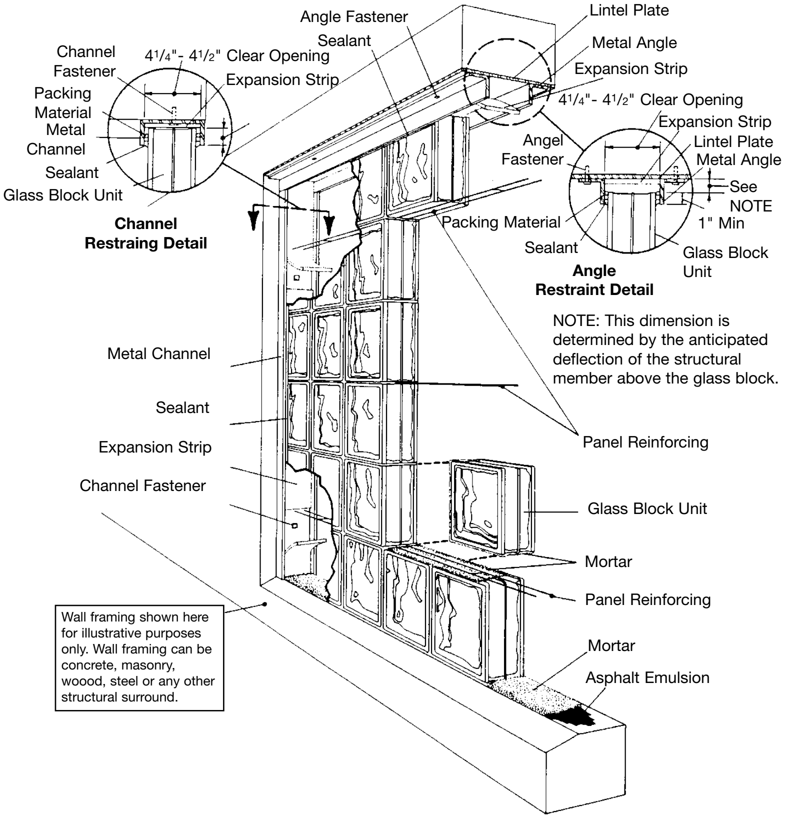
STRUCTURAL PROPERTIES

Glass block is manufactured through a simple, yet exacting process. Silica sand, soda ash, and limestone are mixed and melted in tanks heated to 2,300 degrees Fahrenheit. From those tanks a precise amount of molten glass is poured into a half-block mold. Two halves are sealed together, creating a partial vacuum within the unit, and then fed into an oven to slowly cool and, in the process, strengthen. This is the annealing process. Each block is then treated with a special edge coating of polyvinyl butyral to increase mortar bond and allow for expansion and contraction. Each block is tested for clarity and consistency.

Panel Anchor Construction


Lintel Plate
Panel Anchor
Expansion Strip
Sealant
Lintel Plate
Sealant
See NOTE
Expansion Strip
Panel Anchor
Glass Block Unit
NOTE: This dimension is determined by the anticipated deflection of the structural member above the glass block.
Sealant
Expansion Strip
Panel Reinforcing
Panel Anchor
1/4" Exp. Bolts Two Per Anchor
Glass Block Unit
Mortar
Panel Reinforcing
Mortar
Asphalt Emulsion
Wall framing shown here for illustrative purposes only. Wall framing can be concrete, masonry, woood, steel or any other structural surround.

Channel-Type Restraint Construction


Angle Fastener
Lintel Plate
Sealant
Metal Angle
Channel Fastener
41/4"- 41/2" Clear Opening
Expansion Strip
Expansion Strip
Packing Material
41/4"- 41/2" Clear Opening
Metal Channel
Expansion Strip
Angel Fastener
Lintel Plate
Metal Angle
Sealant
See NOTE
Glass Block Unit
1" Min
Channel Restraing Detail
Packing Material
Sealant
Glass Block Unit
Angle Restraint Detail
NOTE: This dimension is determined by the anticipated deflection of the structural member above the glass block.
Metal Channel
Sealant
Panel Reinforcing
Expansion Strip
Channel Fastener
Glass Block Unit
Mortar
Panel Reinforcing
Mortar
Asphalt Emulsion
Wall framing shown here for illustrative purposes only. Wall framing can be concrete, masonry, woood, steel or any other structural surround.

The unit can be hollow or solid and come in a variety of sizes, shapes, patterns, and textures. The most commonly used units are square (6-, 8-, or 12-inch sizes). Rectangular units (4x8-inch and 6x8-inch) are also available, as are bull-nosed edge blocks for finishing horizontal and vertical panels, and various corner and angular blocks.

What makes the choice of block all the more complex — and delightful — is the wide range of patterns. Clear block with its smooth face offers high visibility and light transmission. Wavy and fluted patterns allow for moderate levels of visual privacy while maintaining high light levels. Even greater privacy comes with stippled, diamond, and tightly ribbed designs. Fibrous glass inserts are also available to provide maximum privacy and further temper light and heat transmission.

Generally, two thicknesses are available. The standard 3 7/8-inch glass block includes the largest selection of patterns, sizes and shapes. Each 3 7/8-inch thick glass block is designed to provide stability and durability, as well as high insulation values, sound transmission, and fire resistance ratings. Thinner 3 1/8-inch block is specifically designed for prefabricated panels of limited size, particularly windows.

In exterior applications, maximum wall areas are based on design wind pressure. Twenty pounds per square foot is a commonly accepted value for wind load resistance for wall construction. The maximum area for exterior panels constructed of standard block is 144 square feet, with a maximum height of 20 feet or a maximum width of 25 feet. This panel is designed to withstand a 20 psf wind load — equivalent to about a 78-mph wind — with a 2.7 safety factor. If larger panels are required, horizontal and/or vertical stiffeners or shelf angles and expansion joints need to be incorporated to maintain the maximum areas recommended per component panel. Design of these structural members must be based on the design wind load and to an L/600 deflection (where L equals the distance between supports).

Interior walls are designed to a lateral load of 5 psf. Interior glass panels are permitted to be larger (up to 250 square feet) than similar exterior panels because of the lower load levels.

Non-Load Bearing. Sometimes referred to as "bricks," glass blocks do not have the load-bearing capabilities as do other masonry products. In fact, glass block can only carry the load of its own weight. Therefore, where panels are inserted into openings, provisions must be made to support the construction above. The available structural support systems assure that the load from the surrounding wall is not transferred to the glass panel and that the possible deflection of the supporting members does not crack the panel.

At the same time, adequate provision must be made for differential movement between the glass and the surrounding wall. It is recommended that expansion joints in the surrounding wall be located at the sides and top of each glass panel. This will isolate the panel and prevent a movement crack in the wall from projecting through the glass panel.

Mortar considerations. Unlike other masonry products (i.e., brick, concrete block, etc.), glass block is non-porous and does not absorb any moisture. Because of this, the consistency of glass block mortar must be stiffer (like peanut butter) than the wetter mortar used with other masonry products. All head and bed joints must be completely filled with mortar, and all joints struck smooth to prevent penetration and migration of moisture.

All model building codes allow the use of Type "S" or "N" mortar with glass unit masonry construction. Type "S" mortar is recommended for exterior applications. Type "S" consists of 1 part Portland Cement, 1/2 part lime, and sand equal to 2 1/4 to 3 times the amount of cementitious material (cement plus lime), all measured by volume. (For exterior glass block panels, an integral type waterproofer is recommended.) No antifreeze compounds or accelerators should be used.

During final cleaning, common mortar-removing chemicals (muriatic acids of any strength) should not be used. Not that these chemicals are detrimental to glass; however, if they are strong enough to remove mortar off the faces of the block, they are also strong enough to remove the thin cement/lime film off the mortar joints, thereby exposing the sand aggregate. Rough joints such as these are highly susceptible to water intrusion.

Panel reinforcement. Horizontal joint reinforcement is important to control cracking due to expansion and contraction. This joint reinforcement should be spaced no more than 16 inches on center and extend horizontally the length of the panel. Hot-dipped, galvanized, 9-gauge steel, ladder-type reinforcement is made of two parallel wires with butt-welded cross wires at regular intervals.

Joint reinforcement should also be placed in the bed joint immediately above and below openings in the glass block panel. For curved walls, the inner wire is cut periodically so the reinforcement can be bent to the radius of the curve. The reinforcement is pressed into the partially filled mortar joint, then covered with the remaining mortar and trowelled smooth. Mortar joints should not be furrowed.

Expansion strips, made of dense fibrous glass, polyethylene, or mineral wood replace mortar at the jambs and head and at intermediate structural locations to allow for panel expansion and contraction.

Panel framing. Three methods for framing glass block panels are recommended to accommodate lateral support along the top and sides of each panel — panel anchor, channel, and chase systems. These supports are designed to resist the applied loads, or a minimum of 200 pounds per lineal foot of panel, whichever is greater.

Panel anchors: Panel anchors tie glass block panels into the surrounding frame at head and jamb locations. Anchors are used along the jambs and at the head, or they can be used in combinations with channel construction where one type of detailing is at the jambs and the other at the head. Anchors are normally placed a maximum of every 16 inches on center. This means that for an 8-inch block, panel anchors would be placed in every other course.

Channel framing: Either a metal channel or metal angles combined to form a channel can be used. The channel opening (for a nominal 4-inch-thick block) must be 4 1/4 inches to 4 1/2 inches wide by a minimum of 1 3/8 inches deep to allow for a 1-inch minimum recess of glass block into the channel and for placement of the expansion material inside the channel. It is critical that the channel opening be square, not tapered as in standard channels, so as not to pinch the edges of the glass block. The oversized opening allows the insertion of packing material and sealant between the recessed faces of the glass block and channel legs.

Chase method: A recessed chase can be inserted into concrete or masonry jambs and head, eliminating the need for anchors or metal channels. The dimensions described must be similar to those described above for metal channels.

Expansion joints. To accommodate movement of the glass, expansion joints at least 3/8-inch thick are required along the top and sides of glass block panels. These joints are filled with a resilient material such as polyethylene, which allows the panel to expand and contract. In exterior walls, joints must be well caulked to prevent water penetration.

At the bottom of the panel, a water-based asphalt emulsion is placed on the sill prior to laying the first mortar bed. This provides a slip plane for the panel and also prevents water from being drawn out of the glass block mortar by absorbent sill materials, such as concrete, brick, wood, or other porous products.

Curved walls. Curved panels require additional structural support where the curved section joins a straight section and at inflection points in multi-curved walls. One method is to connect the panel to a structural member with panel anchors. Installing a steel plate in a vertical head joint can provide a less visible support. Also, panel reinforcing should be modified to follow the contour of the curve by periodically cutting the innermost parallel wire and bending appropriately.

The inside minimum radius of a curved wall is influenced by the size of block being used. Creating a tighter curve means creating a thinner inside joint, which is not recommended, and a thicker outside joint, which may not be aesthetically pleasing.

PERFORMANCE

These unique properties of glass block translate into special performance characteristics regarding fire resistance; resistance to surface condensation, light, heat, thermal and shading performance; sound transmission; and earthquake resistance.

Fire-resistance. Presently, no glass block assemblies qualify as fire-rated wall assemblies. Unlike the wall assembly test that measures a material's integrity, stability and thermal transmission, the glass block window test only determines the ability of the assembly to remain structurally sound and prevent passage of smoke and other noxious fumes during the fire test. Therefore, all assemblies must meet standards set for windows (ASTM E 163) rather than walls (ASTM E 119).

All UL fire-rated glass block on the market meets a 45-minute or longer duration test. Thicker faced and solid units are available with ratings of 60 minutes and 90 minutes. Basically, the window assembly test consists of exposing a panel to a fire under controlled temperature conditions in a furnace. The panel is removed from the furnace after 45 (or 60 or 90) minutes and immediately subjected to a standard water hose steam test to determine impact and thermal shock effects. A glass block window assembly passes the hose stream test if at least 70 percent of its glass block do not develop openings through both faces of the block.

Top: *Lawrence College, Appelton, WI*
Bottom: *Scioto Downs, Columbus, OH / Architect: Kellam and Associates, Inc.*

For curved construction, 45-minute fire ratings can be obtained provided that the maximum allowable curvature does not exceed a ratio of 2:1 with respect to length of radius to length of assembly width (i.e., chord length), and only installed within masonry fire-rated walls.

Surface condensation. Resistance to surface condensation is considered impressive for hollow glass block because of the double face and partial vacuum construction of hollow glass block. In fact, standard glass blocks are considered condensation-free to minus 15 degrees Fahrenheit and thin blocks to minus 8 degrees Fahrenheit. This compares to a single-glaze flat glass, for which condensation can occur when the exterior temperature reaches 33 degrees Fahrenheit.

Light and heat transmission. While light transmission in glass block is nearly equal to that of flat glass, its thermal values are much higher.

For example, the following figures apply to light transmission:

- *Flat sheet glass — 90 percent of visible light that strikes is transmitted*
- *Solid glass block — 80 percent is transmitted*
- *Standard and thin block — 75 percent*
- *Tightly ribbed patterns — 50 percent*
- *Fibrous glass inserts and thick-faced block — 50 percent to 55 percent*

As the thickness of the glass block increases, so does heat transmission values (U values):

- *Sheet glass — U-value = 1.04*
- *Solid glass block — U-value = 0.87*
- *Thin block — U-value = 0.57*
- *Standard block — U-value = 0.51*

Thermal resistance, or R-value, is the inverse of U-value. Regarding R-value, glass block can more than double the resistance of single-glazed, 1/8-inch-thick plate glass. The solid glass block R-value is 1.15, while the 1/8-inch-thick plate glass value is 0.96. With hollow glass block and its inherent partial vacuum, a jump in R-value occurs: The R-value of thin glass block is 1.75 and the R-value of standard glass block is 1.96.

The differences between the shading coefficient of glass block and flat sheet glass is also significant. Thin glass block can reduce the shading coefficient of 1.00 for 1/8-thick flat sheet by 35 percent to 0.65 (and down to 0.45 for tightly ribbed patterns). Contributing to this, experts say, is the louvering effect of glass block's horizontal mortar joints, which helps reduce light transmission from the higher sun. The size and orientation of the block can, therefore, affect the amount of shading that occurs.

Sound transmission. Sound transmission class (STC) is a rating that provides an estimate of the sound-absorbing performance of the partition for general building design purposes. The rating is designed to correlate with subjective impressions of the sound insulation provided against the sound of speech, radio, television, music and similar sources of noise in offices and dwellings. STC value represents an average of sound transmission losses between the 125 Hz and 4,000 Hz frequencies.

The sound-reducing characteristics of glass block are most notable in the hollow block with its partial vacuum (35 STC to 40 STC). With thick-faced and solid block, the STC is 48 and 53, respectively. This compares with about 29 STC for flat sheet glass (1/8-inch thick), 45 STC for single wythe 4-inch brick wall and 50 STC for 6-inch solid c.m.u. wall system.

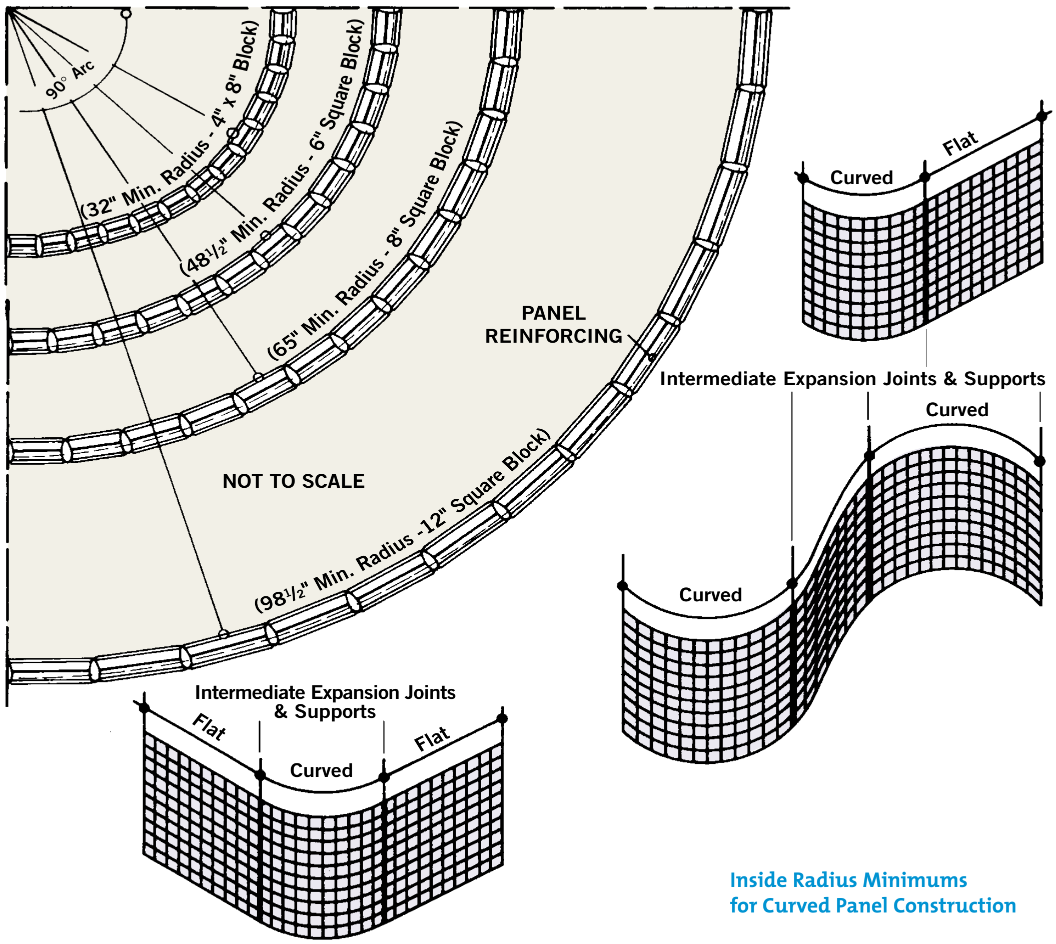
Impact resistance. Glass blocks are inherently stronger than conventional glass because of the thickness of the faces and the mortar that binds the blocks together. As a result, glass blocks are more difficult to break and, therefore, provide resistance and are a deterrent to forced entry and vandalism.

Solid 3-inch glass block units provide the greatest resistance to breakage and are ballistics-tested and qualified to UL levels 1, 2 and 6. Even greater resistance to forced entry can be achieved by using metal grid systems that accommodate the solid units.

In the case of mortared systems, single blocks can be replaced at minimal expense compared to conventional glass, which requires replacement of the full pane or panel.

Earthquake resistance. Glass block panels inherently have two attributes that make them safe in earthquakes. One is their rigidity relative to a tall building's rigidity. When used in tall buildings, the glass block panels experience earthquake motions that cycle back and forth very slowly relative to the vibrational frequency of the glass block. Thus, the glass block's ride during an earthquake is a smooth ride. The building acts like the soft shock absorbers in cars that soften passengers' ride from the irregular imperfections in the road.

The second attribute of the glass block is the rigidity of the glass block panel relative to the rigidity or short buildings or residences. The critical vibrational frequency is greater than the more severe vibrational frequency of the earthquake ground shaking. Therefore, the g-forces from the earthquake are not amplified or turned into the ground motion as other architectural items such as chandeliers or bookshelves. ■


90° Arc
(32" Min. Radius - 4" x 8" Block)
(48½" Min. Radius - 6" Square Block)
(65" Min. Radius - 8" Square Block)
(98½" Min. Radius -12" Square Block)
PANEL REINFORCING
NOT TO SCALE
Curved
Flat
Intermediate Expansion Joints & Supports
Curved
Curved
Intermediate Expansion Joints & Supports
Flat
Curved
Flat

Inside Radius Minimums for Curved Panel Construction

CLICK FOR ADDITIONAL REQUIRED READING

The article continues online at:

archrecord.construction.com/resources/conteduc/archives/0408pitt-1.asp

To receive AIA/CES credit, you are required to read this additional text. For a faxed copy of the material, contact Pittsburgh Corning Glass Block Technical Service at (800) 871-9918. The following quiz questions include information from this material.

AIA/ARCHITECTURAL RECORD
CONTINUING EDUCATION Series

LEARNING OBJECTIVES

- *Identify the structural properties of glass block when used as a building material.*
- *Understand the unique performance abilities of glass block, such as fire resistance, heat and light transmission, sound resistance, vandal resistance, and earthquake resistance.*
- *Grasp some of the economic and aesthetic implications of specifying glass block in specific building projects.*

INSTRUCTIONS

Refer to the learning objectives above. Complete the questions below. Go to the self-report form on page 246. Follow the reporting instructions, answer the test questions and submit the form. Or use the Continuing Education self-report form on *Record's* website—*archrecord.construction.com*—to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

QUESTIONS

1. What is the maximum square footage for an exterior wall built of standard glass block without the use of horizontal and/or vertical stiffeners or shelf angles and expansion joints?
  a. 4 square feet
  b. 12 square feet
  c. 144 square feet
  d. 350 square feet

2. Since glass block is nonporous and does not absorb any moisture, the consistency of the mortar used must be?
  a. Wet
  b. Soft (like butter)
  c. Stiff (like peanut butter)
  d. Dry

3. What should horizontal joint reinforcement do?
  a. Control cracking due to expansion and contraction
  b. Be placed no more than 16 inches on center and extend horizontally the length of the panel
  c. Be pressed into the partially filled mortar joint, then covered with the remaining mortar and trowelled smooth
  d. All of the above

4. Two of the three panel framing methods include panel anchors and channel framing. The third method is?
  a. The plug-in method
  b. The running method
  c. The catch method
  d. The chase method

5. Curved panels require additional structural support where the curved section joins a straight section and at inflection points in multi-curved walls.
  a. True
  b. False

6. All UL fire-rated glass block on the market meets a 45-minute or longer duration test meeting what standard?
  a. ASTM E 163
  b. ASTM E 119
  c. ASTM E 02
  d. ASTM E 30

7. Glass block can more than double the thermal resistance of single-glazed, $^{1}/8$-inch-thick plate glass.
  a. True
  b. False

8. Solid 3-inch glass block units that have been ballistics-tested and qualified provide what level(s) of ballistics?
  a. No resistance
  b. UL level 1
  c. UL levels 1 and 2
  d. UL levels 1, 2, and 6

9. To evenly light glass block with "wall washing" techniques, the light source should be placed how far in front or behind a glass block panel?
  a. 1 inch to 3 inches
  b. 6 inches to 12 inches
  c. 12 inches to 18 inches
  d. 1 foot to 2 feet

10. In commercial projects, what are the rewards of using glass block besides aesthetics?
  a. Reduce vandalism
  b. Reduce construction costs
  c. Reduce lighting costs
  d. All of the above

About Pittsburgh Corning

Pittsburgh Corning is a manufacturer of applied glass technology and systems. Located in suburban Pittsburgh, the company has been a major producer of glass block for commercial and residential use since 1937.

The glass block products are the culmination of more than 60 years of expertise and innovation in designing and manufacturing glass block. The crystal clear glass is designed to meet and exceed an extensive series of internal and industry quality control standards including ISO – 9001:2000. A wide variety of Pittsburgh Corning glass block patterns, shapes, and sizes, and the full line of proven accessories encourages the design of majestic curves and bold waves as well as elegant design touches.

For more information on glass block products, contact the Pittsburgh Corning Glass Block Resource Center at (800) 624-2120 ext. 700; or visit the website at www.pittsburghcorning.com.

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Architects: George Fredrick Bodley; Henry Vaughn, Frohman, Robb, Little; Phillip Frohman

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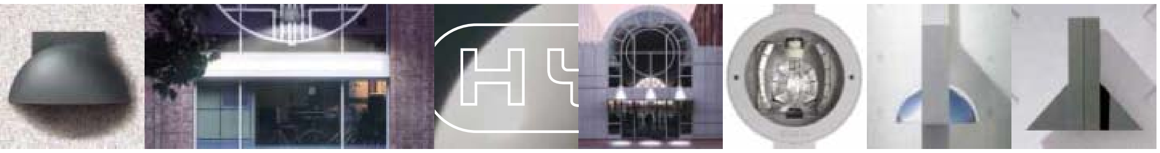

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Lighting

From a workplace in Tokyo to a nightclub in New York City, lighting supports the illusion of infinite vistas

BRIEFS

A survey of light-emitting diode specifiers reports that while architects, lighting designers, and engineers say they are now more likely than before to use LEDs, bringing down costs and increasing white-light output remain concerns. The 136-page study, conducted by Zing Communications, surveyed 3,225 specifiers. For information, go to www.lightsearch.com.

Lightolier is celebrating its centennial in 2004. Originally incorporated as the New York Gas Appliance Company by Austrian immigrant Bernhard Blitzer, the manufacturer was an innovator in early fluorescent designs, flexible fixtures, and track lighting, and this year introduced its next generation of HID lighting. Consultant Dan Blitzer, great-grandson of the founder, has written a history of the company, including a time line of technical innovations. Go to www.lightolier.com.

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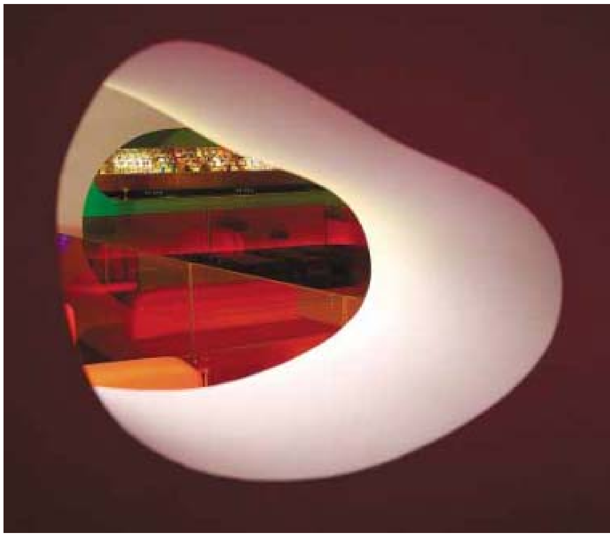
PHOTOGRAPHY: © FRANK OUDEMAN

The CAD Center in Tokyo is not your average workplace. The domain of a fast-growing business that has branched out from architectural computer graphics to specialties that include virtual-reality simulation, the facility presents a brave new world filled with imaginative images and some seemingly boundless vistas. Working with consultant Hiroyasu Shoji of Lightdesign, architect Satoshi Ohashi has designed public and meeting spaces that welcome clients into an ethereal realm imbued with low-level, dramatic illumination. Guests can follow a zigzag of blue fluorescent light along its way across a ceiling, stand before a glowing blue presentation wall slashed with red lasers, or lose themselves in a virtual-reality theater whose ceiling and floor seem to merge and eliminate a horizon line—with the help of lighting and carefully positioned projection screens.

Designer Karim Rashid and consultant Paul Gregory of Focus Lighting, who previously collaborated on the Morimoto restaurant in Philadelphia [RECORD, November 2002, page 164], have teamed up again to design Powder, a New York City nightclub that weds constantly changing lighting with adventurous, amorphous forms (right). Here, too, there is a fluidity of light and space at play. An arcing perimeter wall, lit by MR16s fitted with dichroic filters, creates the illusion of a boundless sky.



Colorful illumination also distinguishes the Discovery Communications headquarters in Maryland, designed by SmithGroup. Its architectural forms are not as otherworldly as those of Powder or CAD Center, yet the complex presents a dynamic visual presence benefiting from exterior lighting by LEDs and metal halides. The fixtures enhance the lines of a tower and sweeping roof, while drawing the eye inward to interior surfaces visible through glazing. And besides its use of new lighting sources, SmithGroup is also breaking new ground regarding collaboration. Since 1997, the firm has supported an in-house lighting practice headed by Rodrigo Manriquez and Jeff Gerwing, who were both trained as architectural engineers. Frequent collaborators with SmithGroup architect colleagues, the four-person team in Detroit also consults on projects designed by outside firms. Currently working on everything from sports stadiums to museums, the studio has grown into a valued resource close at hand. *William Weathersby, Jr.*

IVALO
LIGHTING

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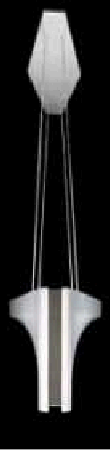

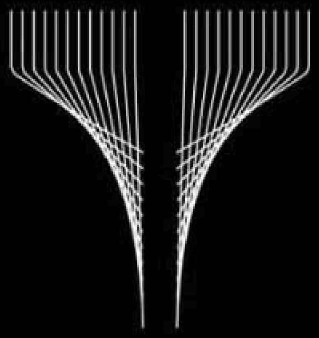

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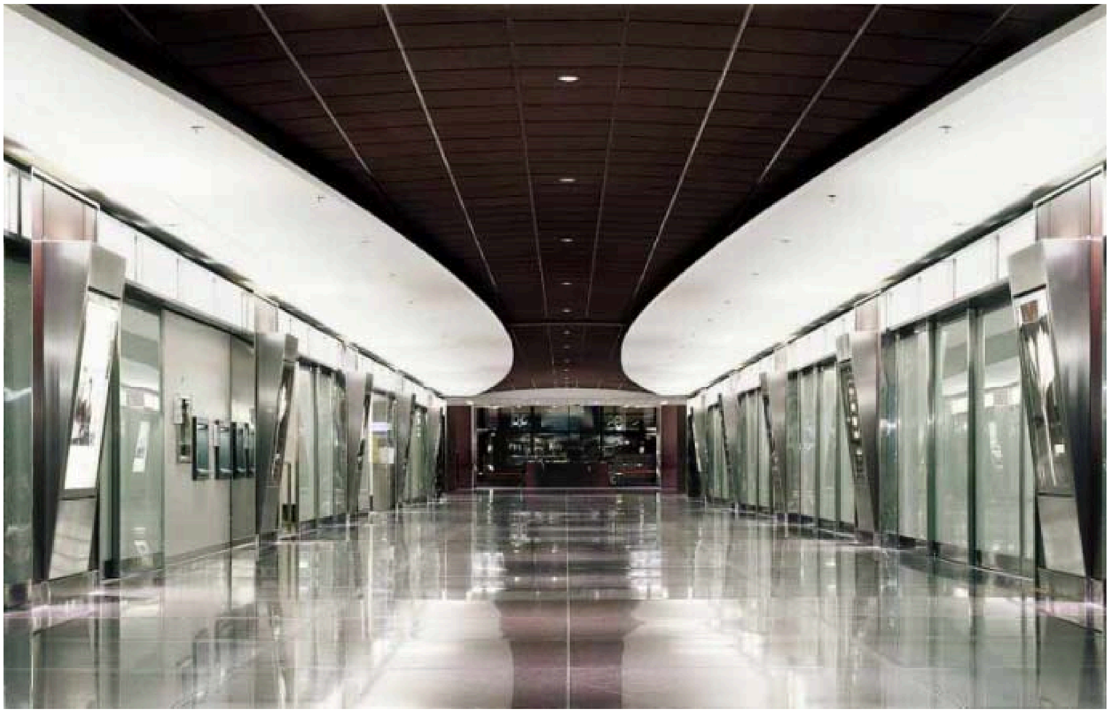
Creative Uses



Metal halides and fluorescents are among fixtures lighting the retail area (left), reception lobby (below), and security stations (bottom).

Indirect illumination enhances an office's lobbies and retail corridor

Seeking to improve the rental-market attractiveness of a 2-million-square-foot, 1980s office complex in downtown Chicago, client Equity Office Properties commissioned IA Interior Architects to renovate the ground-floor public spaces of the complex's two adjacent buildings on Wacker Drive. More than 25,000 square feet of lobby space, connected by a retail corridor, required a face-lift. Lighting orchestrated by consultant Stefan Graf, principal designer of Illuminart, was a central element of the makeover.

A key objective of the project was to secure the renewal of a 600,000-square-foot lease for the anchor tenant, the Mercantile Exchange, during a market downturn. "The entire complex lacked a unifying identity," says principal architect Tom Powers. "We wanted to enhance the sense of arrival for guests and tenants."

Another concern, he says, was to upgrade lobby security while allowing its mechanics and operations to remain unobtrusive. Rounding out the program, existing retail tenants wanted to dress up the corridor of shops to attract more business.

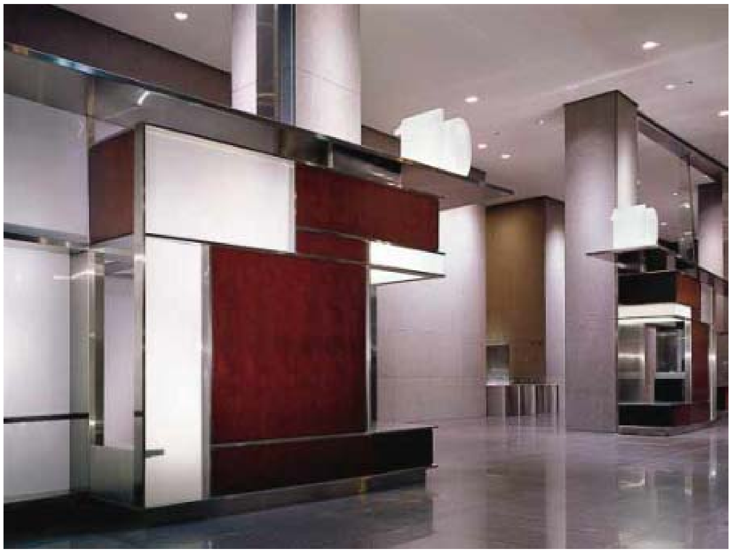
Indirect lighting drives the new ambience. "The existing illumination was mostly from downlights that created pools of light and shadow," Graf says. "We used lighting to indirectly wash the vertical architectural surfaces so pedestrians can clearly identify visual cues and easily navigate through the space."

In the retail area, curved white drywall canopies lower the scale of the ceiling in front of the stores on both sides of the corridor. Light boxes that display colorful commercial images are incorporated into canted steel columns that frame each store. Two 40-watt compact fluorescent fixtures are concealed within the top of each column, casting illumination on the canopies above. Light from these fixtures is brighter than the surrounding illumination and creates a glow above the graphic images. Though some light is reflected off the ceiling, the effect is subtle, and brightness is centered along the storefronts.

Atop each storefront, horizontal panels of translucent glass, framed by stainless steel, conceal linear fluorescents that provide additional ambient light.

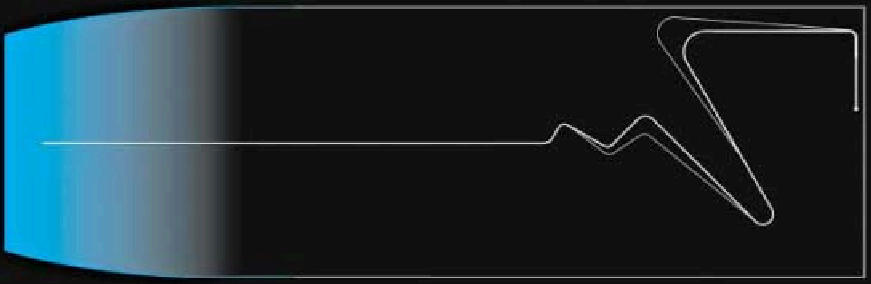
Recessed downlights placed in the corridor's uppermost ceiling, which has new, reddish acoustical tile, were fitted with long-life PAR20 metal-halide lamps housed in adjustable fixtures.

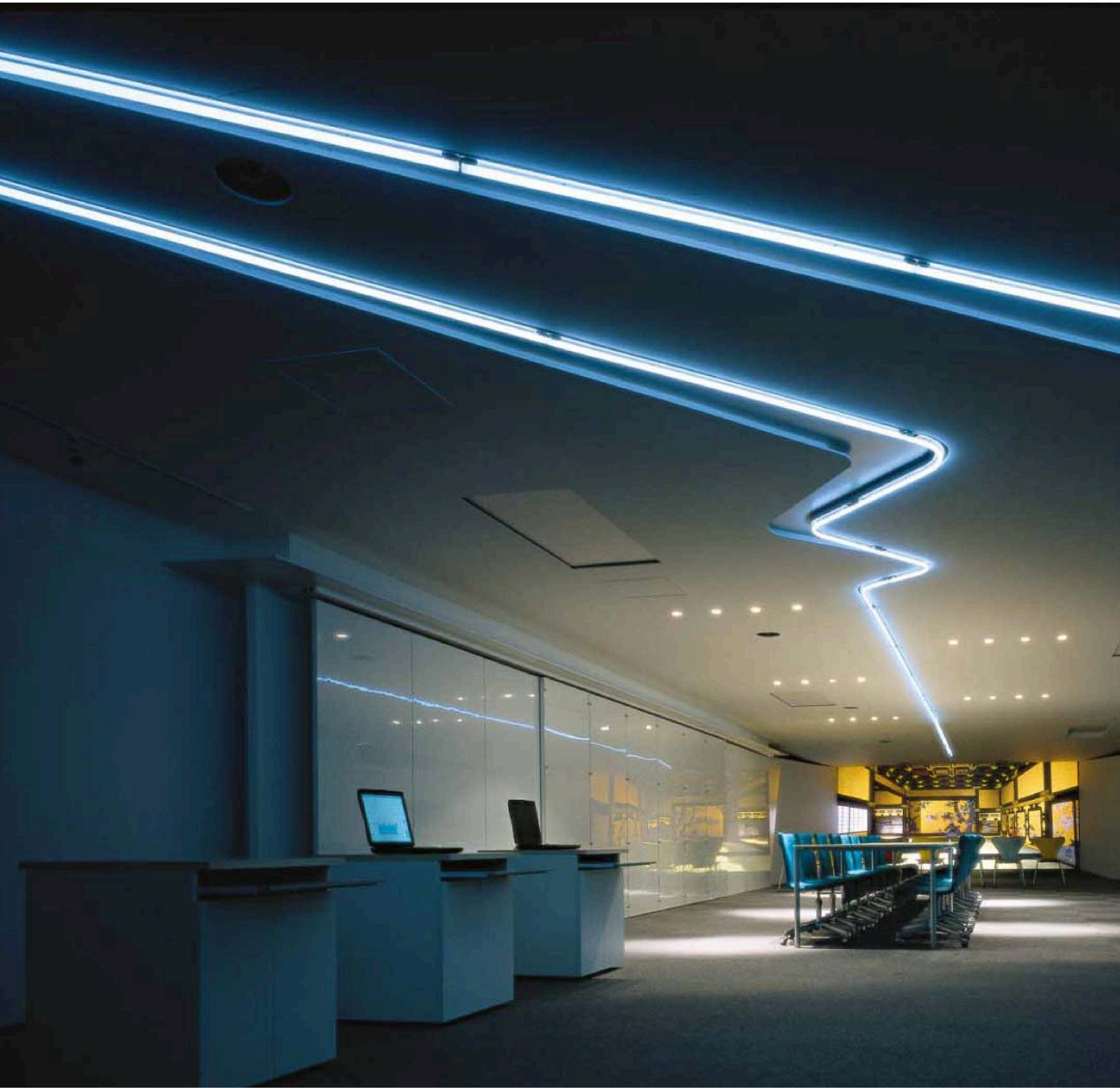
In the elevator lobbies, new acrylic numerals sit atop steel platforms to identify the complex's two addresses, 10 and 30 South Wacker Drive. Concealed fluorescent strips make them glow. Nearby, each security station is a collage of wood and translucent, backlit panels edged in steel. The units have the look of sculpture, attractively masking a sometimes laborious inspection and entry-approval process. *William Weathersby, Jr.*



PHOTOGRAPHY: © CHRISTOPHER BARRETT/HEDRICH BLESSING

A zigzagging line of fluorescents leads guests into the Media Space, creating an illusion of expansiveness within the below-grade facility (below and ceiling plan, right) .





At **CAD Center,** Satoshi Ohashi and Lightdesign create new offices in Tokyo that mirror the city's kinetic energy

PHOTOGRAPHY: © TOSHIO KANEKO

By Leanne B. French

When commissioned to design a new 14,700-square-foot headquarters for CAD Center, a multimedia technology company in Tokyo, architect Satoshi Ohashi found inspiration in the kinetic, light-box energy of the surrounding streetscape. The progressive spirit and growth of the company, which has expanded its specialty from architectural computer graphics to include virtual reality, Web design, and digital visualization, reminded the architect of an urban microcosm—vibrant and in flux. Reflecting upon this metaphorical link between client culture and city, Ohashi set out to transform three floors of standard-issue office space into a self-contained, glowing metropolis.

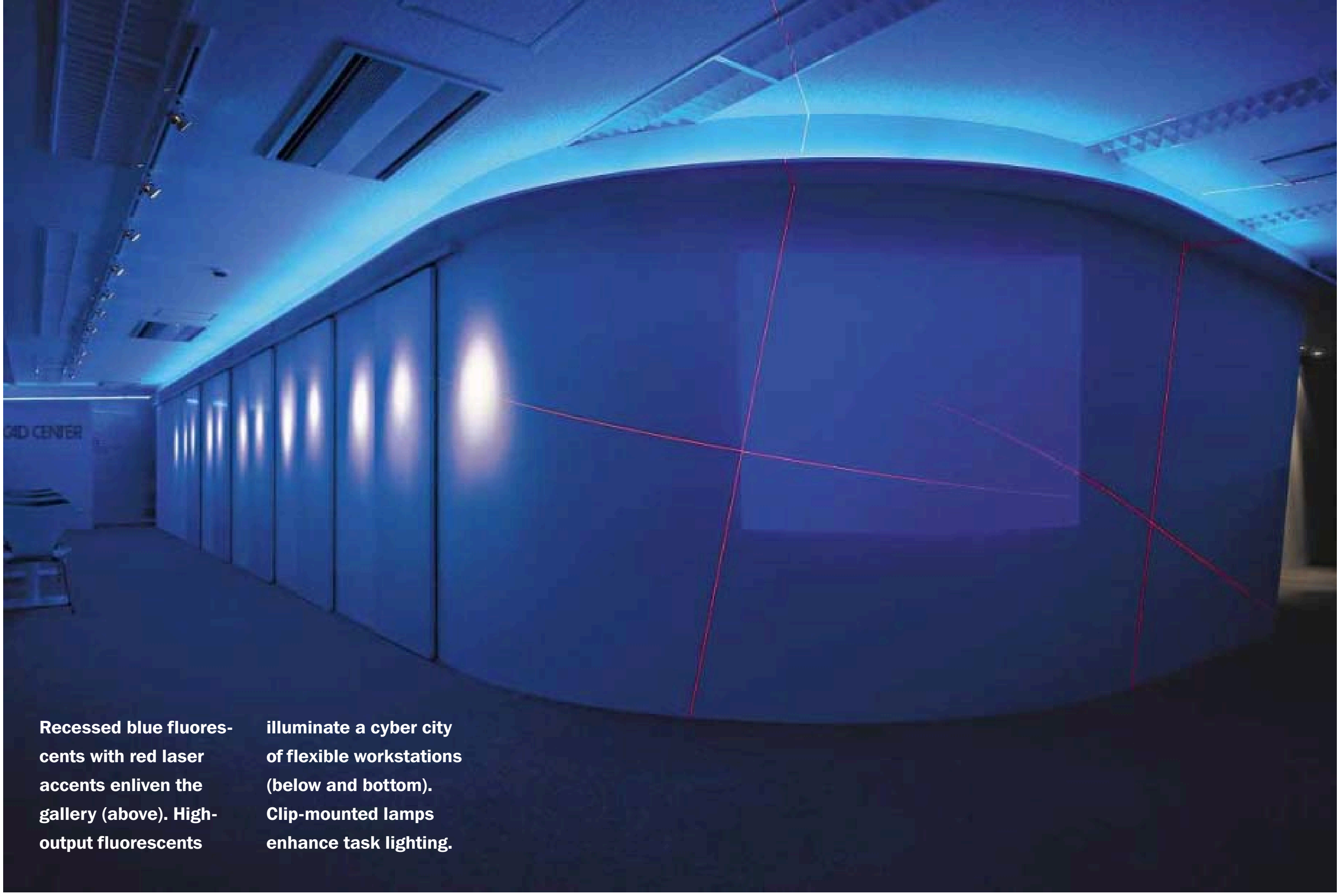
Seeing his role akin to that of a city planner, Ohashi says he focused on "infrastructure and lines of flow" to support the company's workforce of 120 employees and to allow for inevitable changes and growth. Built in four phases, the headquarters encompasses a first floor with an entry lobby, administrative space, and a gallery to showcase the company's projects. A creative studio on the second floor houses computer graphics workstations, while a below-grade-level Media Space buzzes with high-tech presentation rooms, a motion gallery, and a virtual-reality theater.

Both cleverly practical and unexpectedly illusory, the office landscape encourages mobility and creativity. Plug-and-go workstations accommodate changing project teams, while enclosures seem fluid with sliding doors, "graffiti walls" for jotting down ideas, and wall planes curving upward to meld into ceilings. Above it all, lighting elements travel in contours that, like routes traversed on an urban superhighway, seem to direct workplace circulation.

Lighting consultant Hiroyasu Shoji of Lightdesign teamed with Ohashi on illumination that is both "welcoming and unusual," he says, not unlike CAD Center's virtual creations. At the entry, recessed blue linear fluorescents create a mysterious, intriguing ambience. Halogen spotlights in the gallery nearby draw visitors toward computer graphics projected on acrylic panels that function as multimedia canvases. A "Sky Wall" illuminated in blue, the company's signature color, sets the mood, particularly at night, when the glowing space is accented by slashes of red laser light. "The blue creates a cooler, perhaps 'digital' sense of space and depth," says Ohashi, "at times conveying the feeling of the sky within an interior environment."

On the second floor, a "cyber city" of computer workstations is connected by a continuous yellow, S-shaped border overhead that integrates power cables and equipment for lighting and sound. Here, architectural elements are mined for multiple purposes: Walls function as both partitions and surfaces for projecting digital video, overhead steel storage lockers display print graphics, and sliding acrylic panels can be flipped to become marker boards. High-color-temperature (8,000K),

Leanne B. French is a freelance writer based in New York City. She frequently writes about lighting and interiors for RECORD.

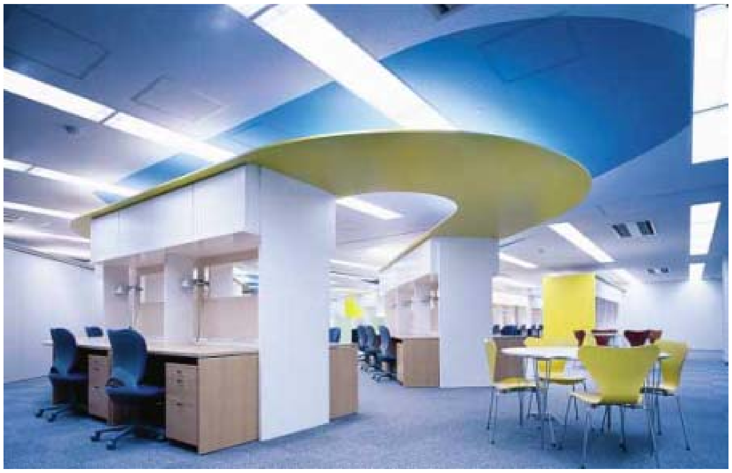


Recessed blue fluorescents with red laser accents enliven the gallery (above). High-output fluorescents illuminate a cyber city of flexible workstations (below and bottom). Clip-mounted lamps enhance task lighting.

high-output (1,000 lux) blue fluorescents and mini-halogen pinlights illuminate the general work areas. Each workstation is also lit by a clip-mounted lamp designed by Tolomeo Pinza.

A virtual landscape unfolds in the basement-level Media Space. A zigzagging brushstroke of continuous light along the ceiling leads visitors toward the virtual-reality theater, motion gallery, and presentation rooms. The meandering course of curved fluorescent tubes, complemented by walls edged with light rails, lends a sense of expansiveness to the below-grade space, which measures 24 feet wide by 92 feet long. Halogen spotlights and pinlights are on presets to create varied moods.

To support participants' virtual-reality experience within the Media Space, hardware wizardry is concealed within the infrastructure, and screens are placed precisely. A subtle, almost imperceptible downward slope in the ceiling, paired with an upward pitch of the floor in front of the virtual-reality screens, creates the illusion that the intersecting edges of the walls, ceiling, and floor disappear. Through such carefully planned architectural gestures enhanced by lighting, Ohashi and Shoji have transformed this everyday technology workplace into a dramatic, soaring, self-contained world. ■



Project: *CAD Center, Tokyo*

Lighting designer: *Lightdesign—Hiroyasu Shoji, principal lighting designer; Michiko Yokota*

Architect: *Satoshi Ohashi Architecture—Satoshi Ohashi, principal architect; Miki Agata, Hiroshi Amano, project team*

Sources

Fluorescents: *NIPPO; Mitsubishi/Osram*

Halogens: *Ushio Spax; Ardee Light*

Desk lamps: *Yamagiwa/Artemide*

Lighting controls: *Lutron*

For more information on this project, go to Projects at ***www.architecturalrecord.com***.

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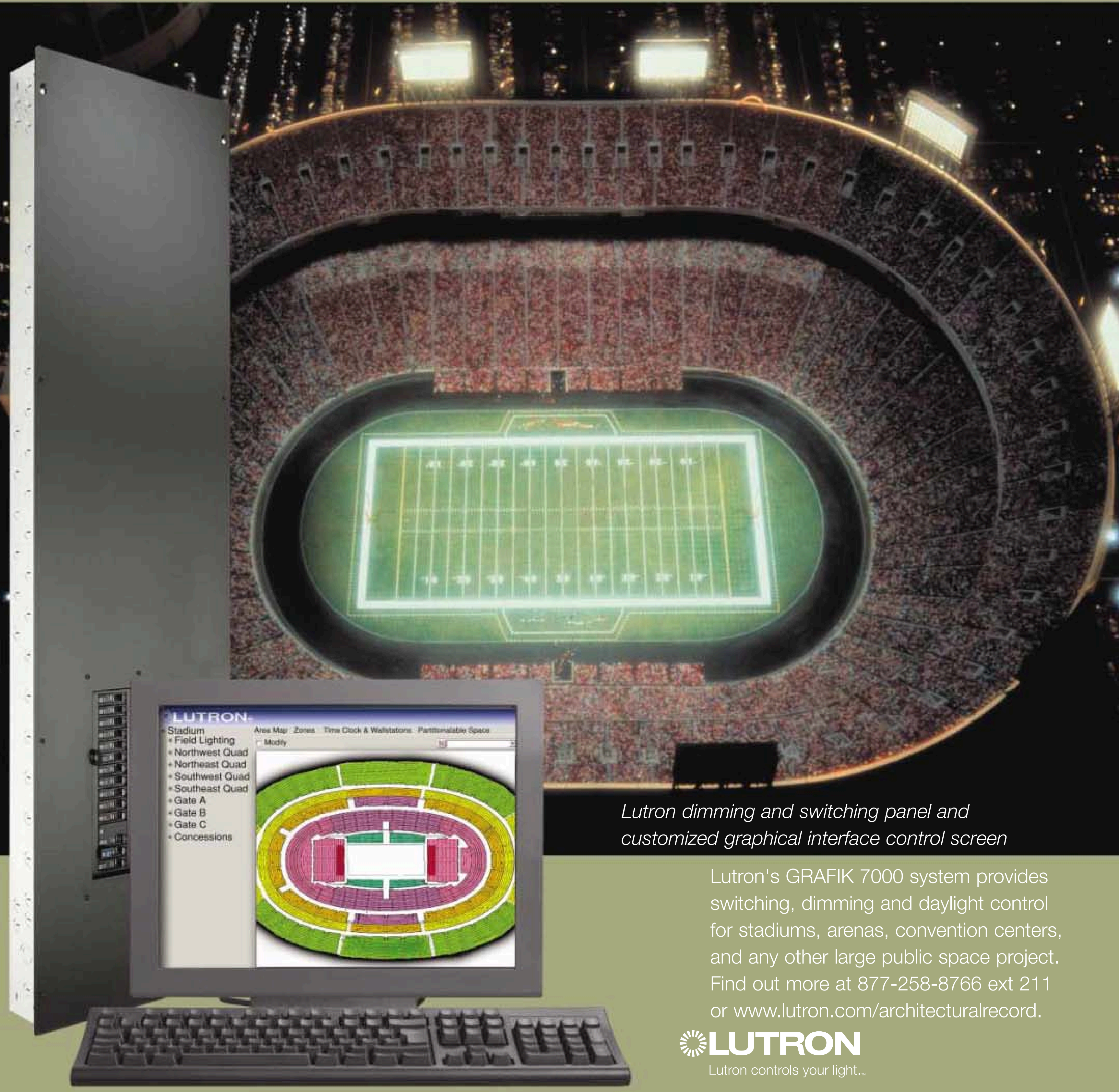
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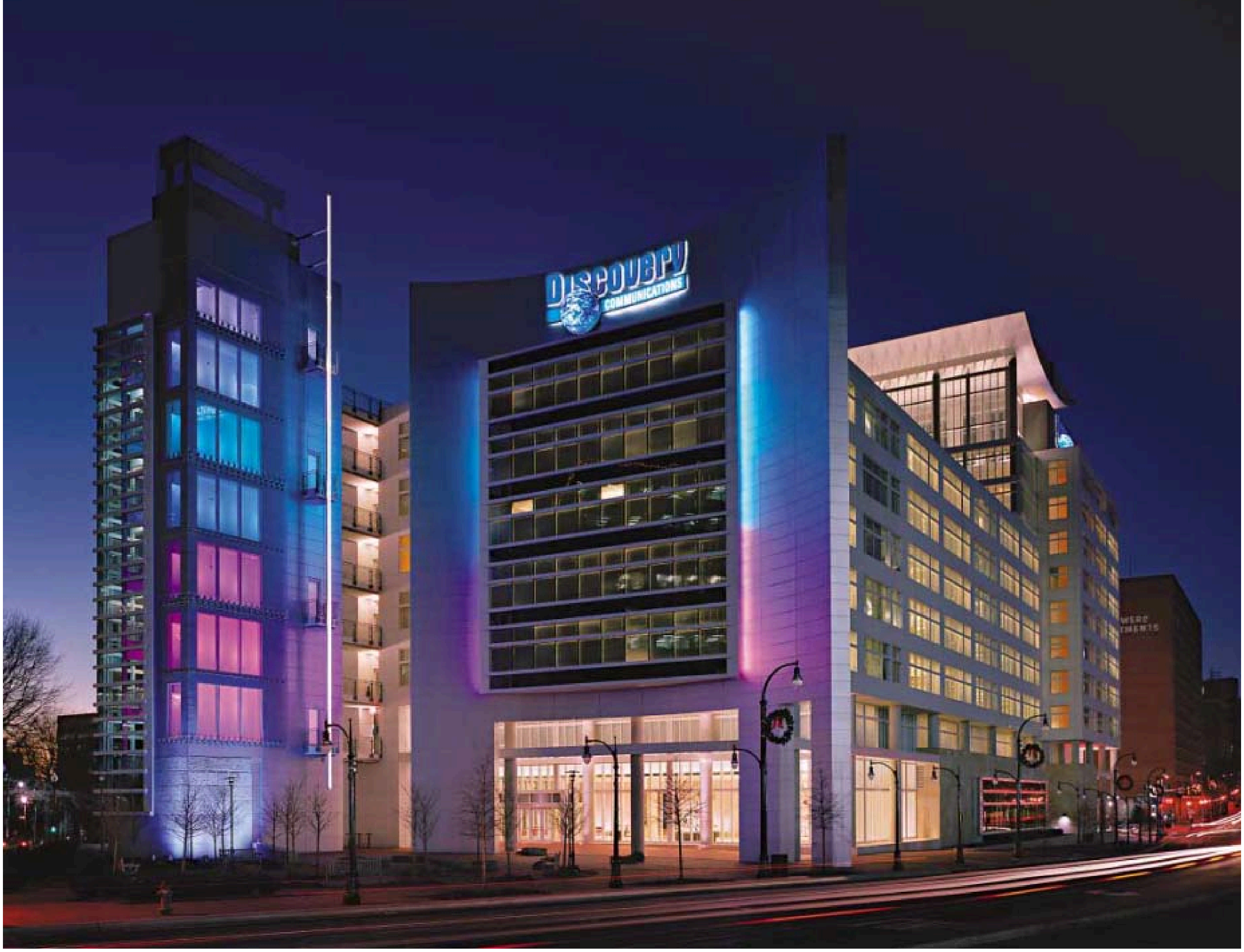


Discovery's headquarters was designed by SmithGroup, whose lighting team lit the facade with LEDs.

PHOTOGRAPHY: © PRAKASH PATEL

SmithGroup bathes the **Discovery Communications** headquarters in changing color with the newest sources

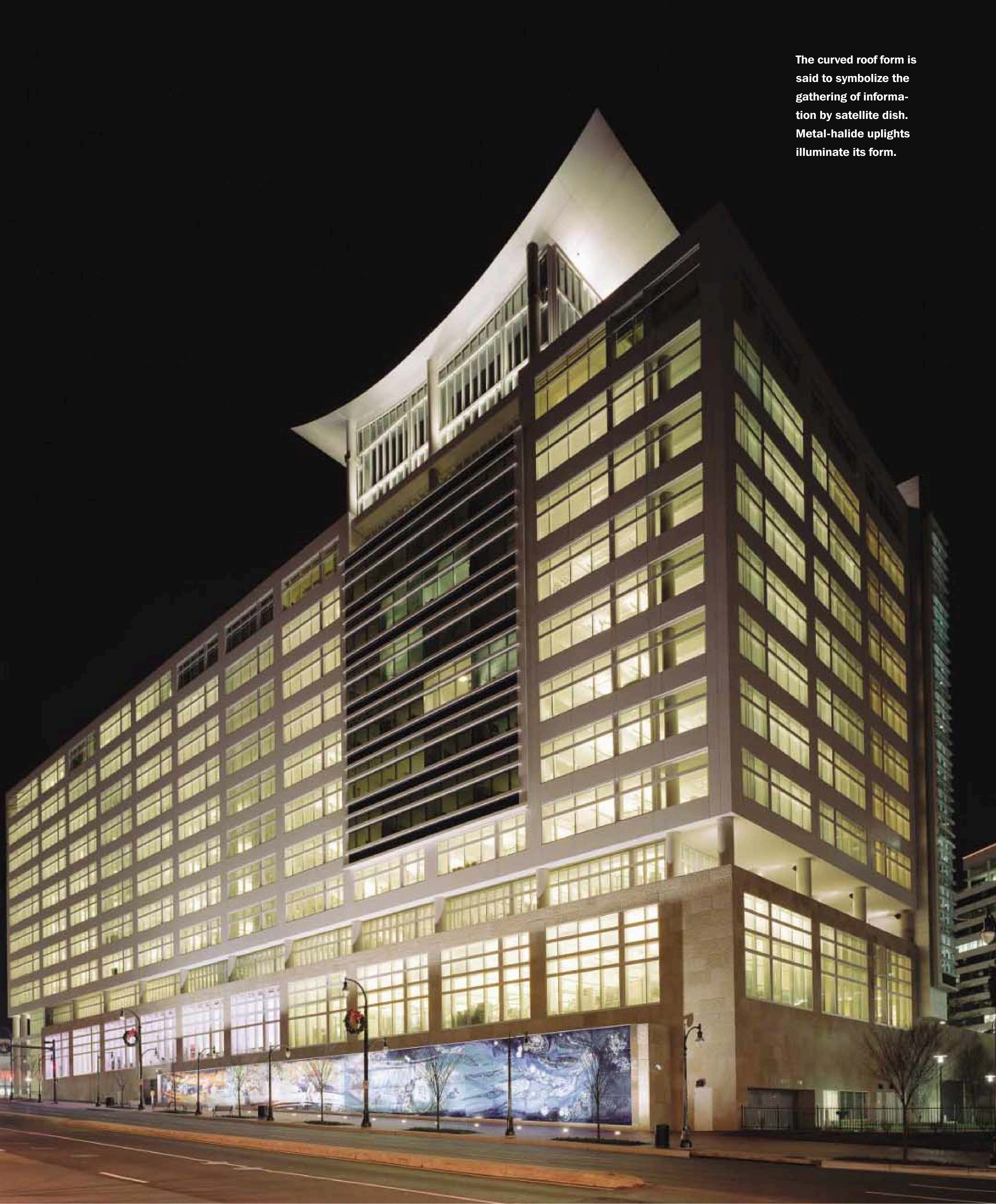
By Charles Linn, FAIA

Cynthia Johnson, AIA, of SmithGroup, describes the site of the new world headquarters for Discovery Communications in Silver Spring, Maryland, as a linchpin in the revitalization of this Washington, D.C., suburb. Its corner-lot location links a busy regional transit hub with one of the town's most important zones for offices and retail, so thousands of commuters pass it every day. "We knew this building would become an icon for the community, as well as for Discovery," says Johnson, the principal in charge of the project.

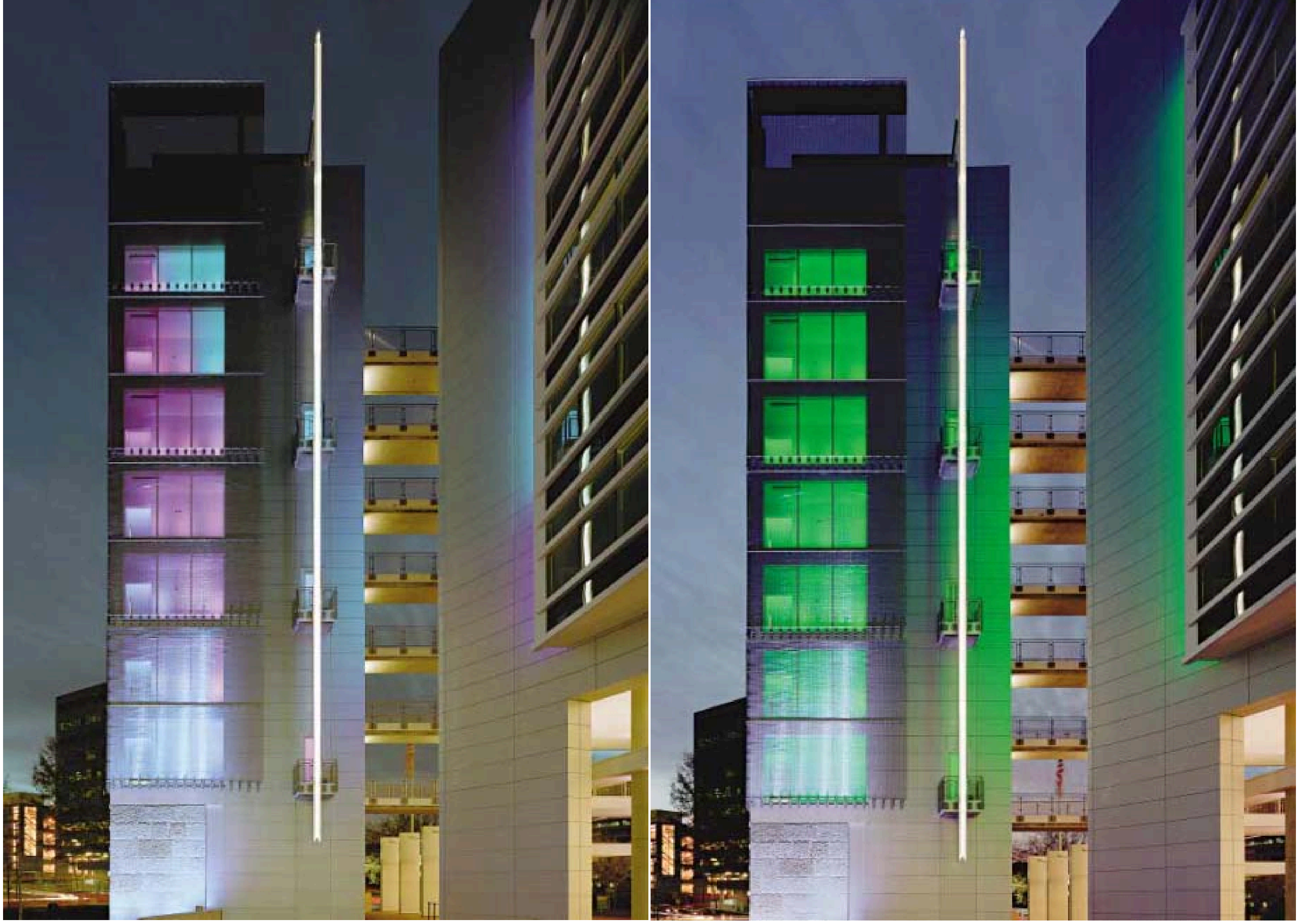
The expectation that the 580,000-square-foot building would become a local landmark meant the facade would have to do more than fade to black at night to remain center stage. And more than a static display of lighting was called for by a media company whose properties include cable offerings like the Discovery and Travel Channels.

"We used light to paint a picture," explains SmithGroup's in-house lighting designer Rodrigo Manriquez. He and colleague Jeff Gerwing illuminated the curving forms along the roof line, the wall around the building's main entry facade, and an adjacent stair tower using several different lighting devices. Vertical stripes of color backlight the edges of the five-story-high window wall, which projects out from the exterior surface of the curved front-entry facade. This light is furnished by rows of recently developed high-brightness LED lamps that are sealed inside weatherproof housings. The illumination they create is concentrated by a series of linear parabolic reflectors and bounced onto the facade's reflective-metallic-finished steel panels.

The light that is visible inside the metal-mesh-covered stair-tower windows is produced by a row of floor-mounted LED projector fixtures located under each window, and by strips with LEDs inside mounted over them. Both the interior and exterior fixtures house red, blue, and green LEDs. Almost any color of light can be made by individually varying the intensity of any of the three LED colors. A DMX-control system slowly cycles both the interior and exterior fixtures through five different scenes, each lasting about three minutes. The front



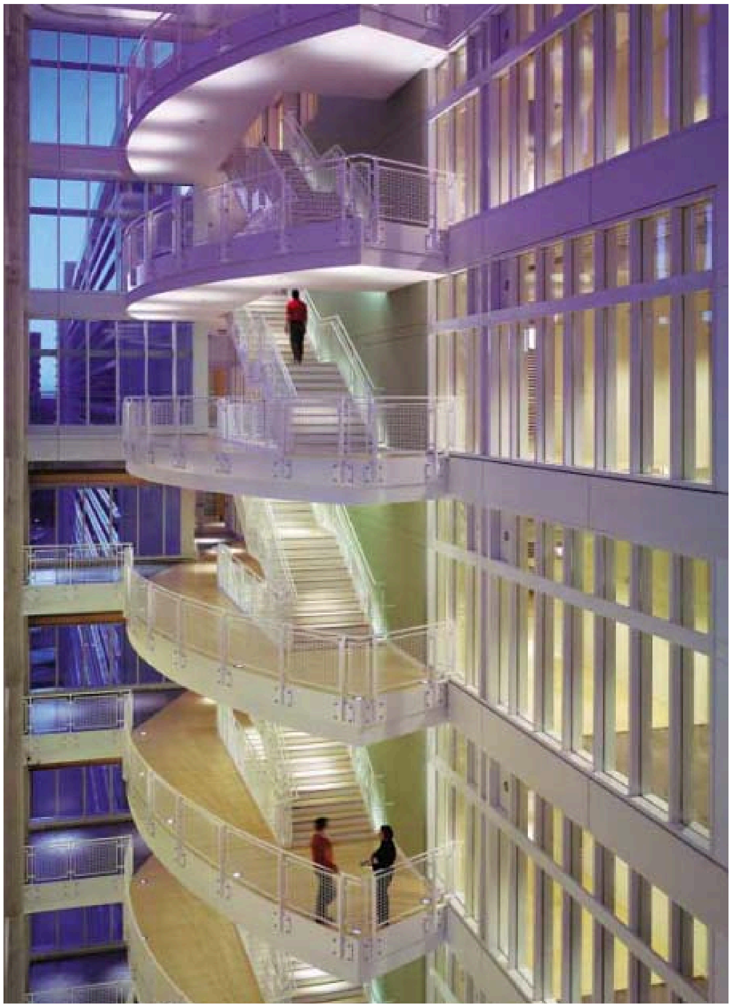
The curved roof form is said to symbolize the gathering of information by satellite dish. Metal-halide uplights illuminate its form.



Metalhalide lamps illuminate the light tube (above two) used as a symbol of the once-common broadcast antenna. In the atrium, backlit stringers (right) make stairs appear to float. Uplights in the floor of each landing light the underside of the platform above it.

surface of the stair tower is also grazed by blue metal-halide lamps in recessed inground uplights.

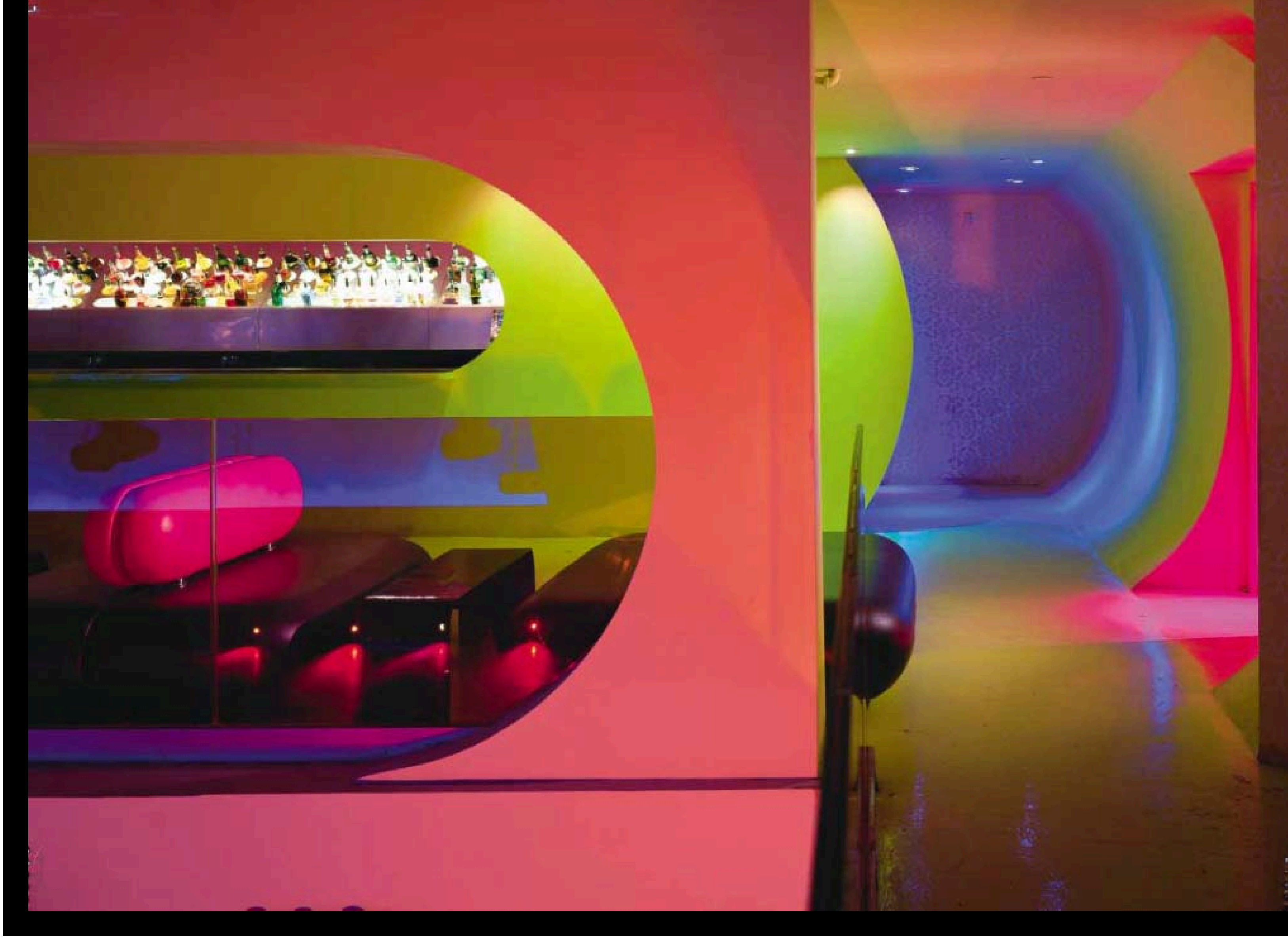
The tall, antennalike bar of lighted material mounted on the building to the right of the stair-tower windows is made of four lengths of proprietary plastic and aluminum tube, placed end-to-end. A special reflective film allows light from a metal-halide lamp, which is fed from the midpoint of each piece of tubing, to be reflected evenly along its length. The long life of the metal-halide and LED sources ease maintenance concerns while providing a colorful overlay to Discovery. ■



Project: *Discovery Communications World Headquarters, Silver Spring, Maryland*
Architect, lighting designer: *SmithGroup—David R. King, FAIA, design principal; Cynthia Johnston, AIA, project manager; Jeffrey Gerwing, Rodrigo Manriquez, lighting specialists*
Interior designer: *Gensler*
Lighting programmer: *Washington Entertainment Technologies*
Electrical engineer: *Flack and Kurtz*

Sources
Light tubes: *TIR Systems*
LED cove fixtures, light panels: *Color Kinetics*
Inground uplights: *Hydrel*
Blue metal-halide lamps: *Venture*
Lighting controls: *Martin Proscenium DMX*

For more information on this project, go to Projects at **www.architecturalrecord.com**.



Focus Lighting sprinkles a little bright magic over **Powder,** a nightclub designed by Karim Rashid

By Alice Liao

According to designer Karim Rashid, dancing in the dark is a thing of the past when it comes to urban nightclubs. While dimly lit spaces and megasize dance floors were the norm in the 1980s and '90s, Powder, a New York City venue designed by Rashid for the new millennium, has free-flowing interiors and luminous walls to create an environment that celebrates going out on a more intimate scale. With atmospheric, multihued lighting that wraps a variety of seating areas for lower-key social interaction, "Powder is something of the antithesis of what nightclubs are typically about," he says.

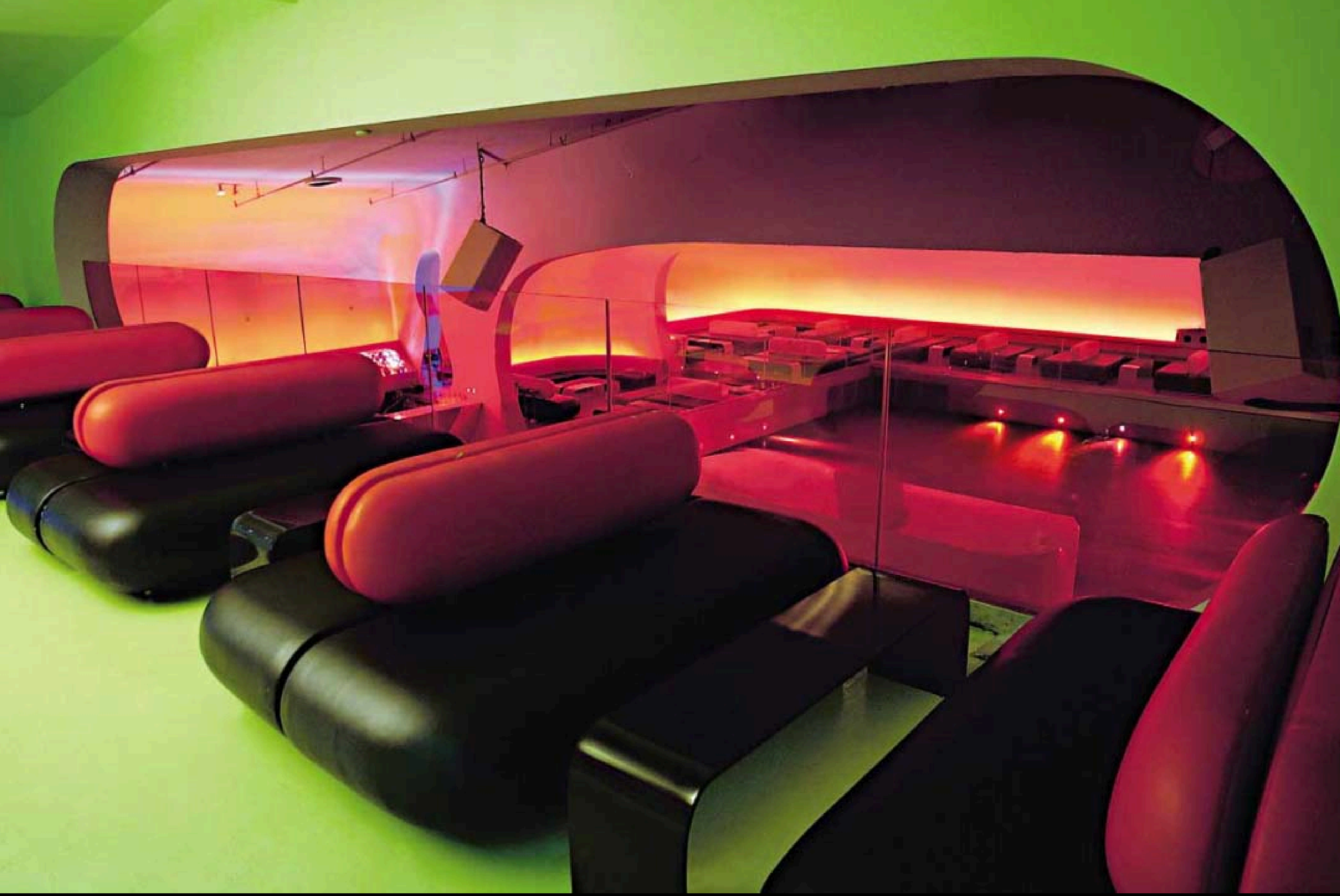
Vibrant illumination by Focus Lighting sets the mood for Powder and amplifies its dramatic architecture. "The lighting at Powder enhances the futuristic shapes of the interior and plays a major role in activating people's imagination, making them feel that they are moving into a different world," says principal lighting designer Paul Gregory.

Situated in New York City's Meatpacking District, the 11,000-square-foot venue occupies the first floor of a 16,000-square-foot entertainment complex, which also includes a photography studio and a special events space. (The club itself has been a big draw for film and music companies renting the facility for premiere and launch parties.) Once a factory and later a garage, the raw space featured a pitched

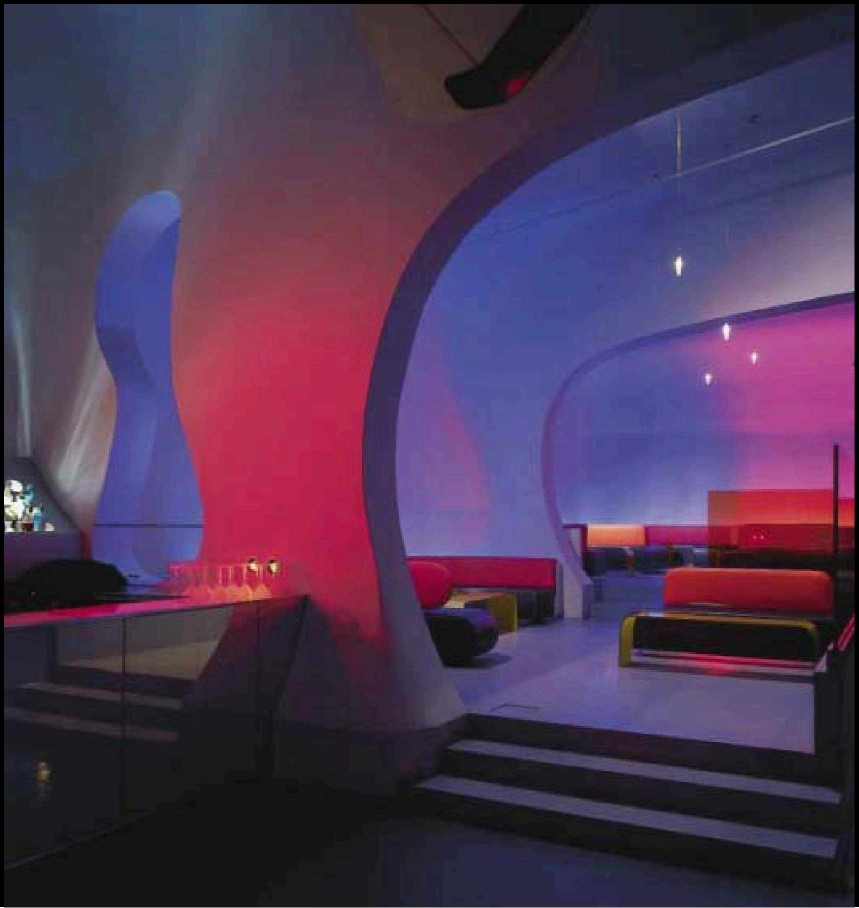
Alice Liao is a freelance writer based in Teaneck, New Jersey. She is a regular contributor to the special lighting section of RECORD.

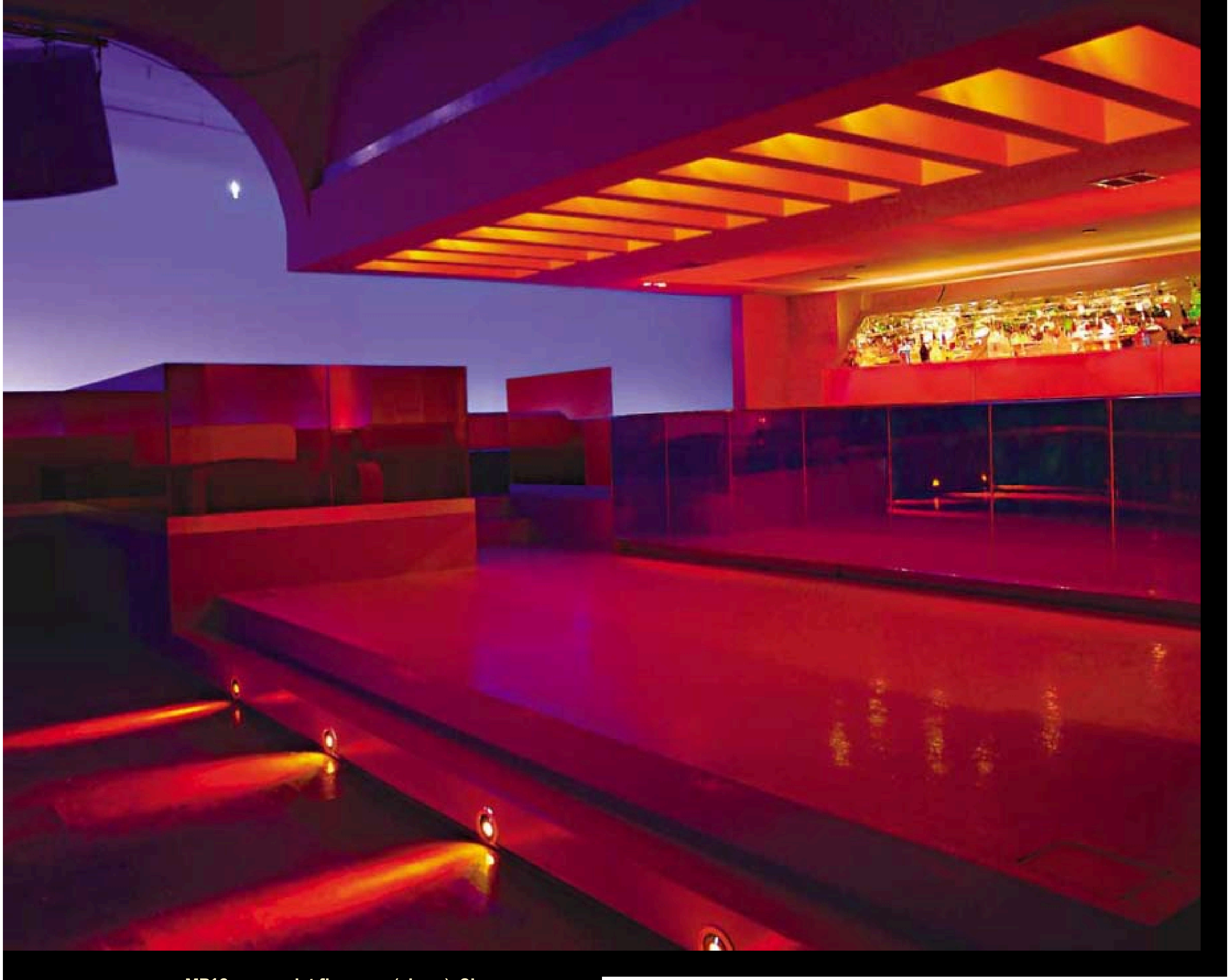
Project: *Powder, New York City*
Lighting designer: *Focus Lighting—Paul Gregory, principal designer; Diana Ades, project designer; Gwen Grossman, assistant designer; Terrence Connolly, project manager*
Interior designer: *Karim Rashid—Karim Rashid, principal designer*
General contractor: *Fernandez Construction*
Electrical contractor: *Mario Lozada*

PHOTOGRAPHY: © FRANK OUDEMAN (THIS PAGE AND OPPOSITE, BOTTOM); RAMIN TALAIE (OPPOSITE, TOP)

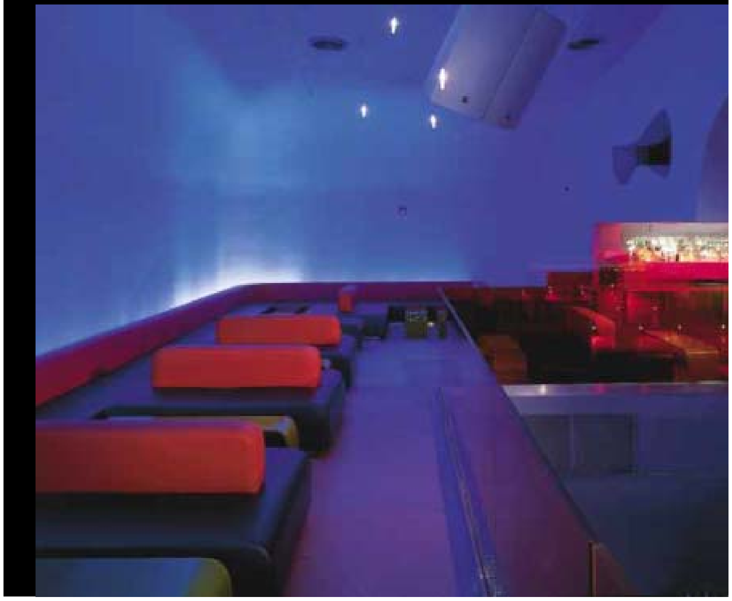


Dichroic filters and MR16 fixtures add punch and drama to the lime-green VIP lounge on the mezzanine level of Powder (opposite and above). Contrasts in color and intensity define the amorphous landscape of the club (right).





MR16 monopoint fixtures, fitted with color filters and concealed in ceiling coffers, bathe guests in amber light (above). Glass pendants with halogen sources are randomly spaced to suggest stars (below).



roof and large trusses that made creating a futuristic environment a challenge, Rashid says. Further complicating the assignment was the project's tight budget. Although average building costs of a typical New York nightclub range from $200 to $250 per square foot, Powder was completed for a mere $80 per square foot. "I almost thought it impossible," Rashid says.

The transformation from industrial site to hip nightspot was achieved with an architectural envelope that eschews sharp lines and corners for an overall amorphous feeling. While the layout of the club—bars and lounges grouped around a central dance floor—may be familiar, the entire space is contained by an arcing perimeter wall that fuses seamlessly with the ceiling, giving the appearance of a boundless sky. Portals and whimsically shaped cutouts promote a spatial fluidity while contributing to Powder's ethereal ambience. "I wanted to develop a space that felt like infinity," Rashid notes.

WITH MELDING, COLORED PLANES, "I WANTED TO DEVELOP A SPACE THAT FELT LIKE INFINITY," SAYS KARIM RASHID.

Although an early schematic concept suggested illuminating the interiors with white or a faintly tinted light, in the end the design team opted for a dynamic scheme of saturated hues and shifting contrasts to alter the perception of the interiors. According to Gregory, immersing the

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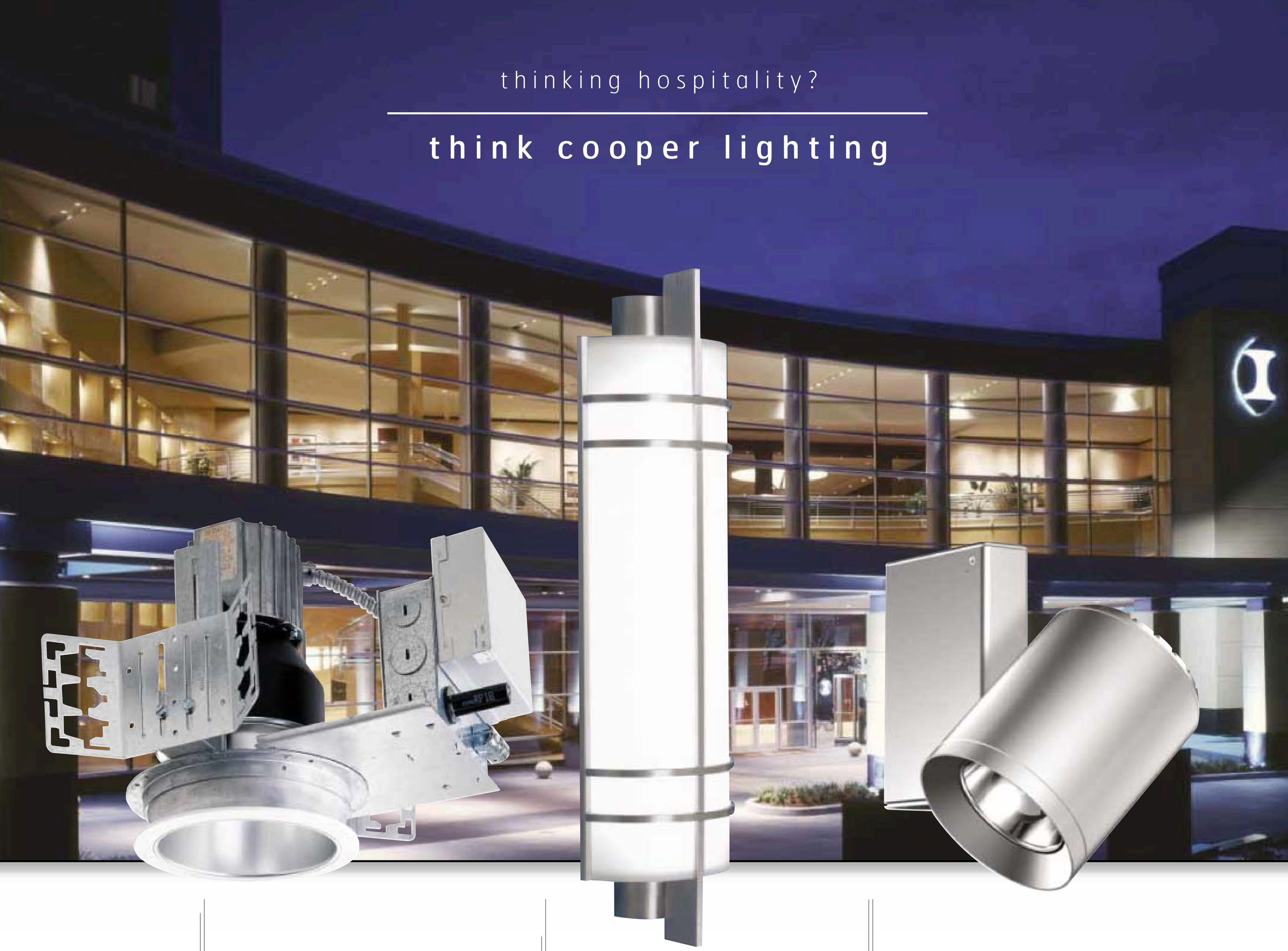

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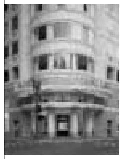

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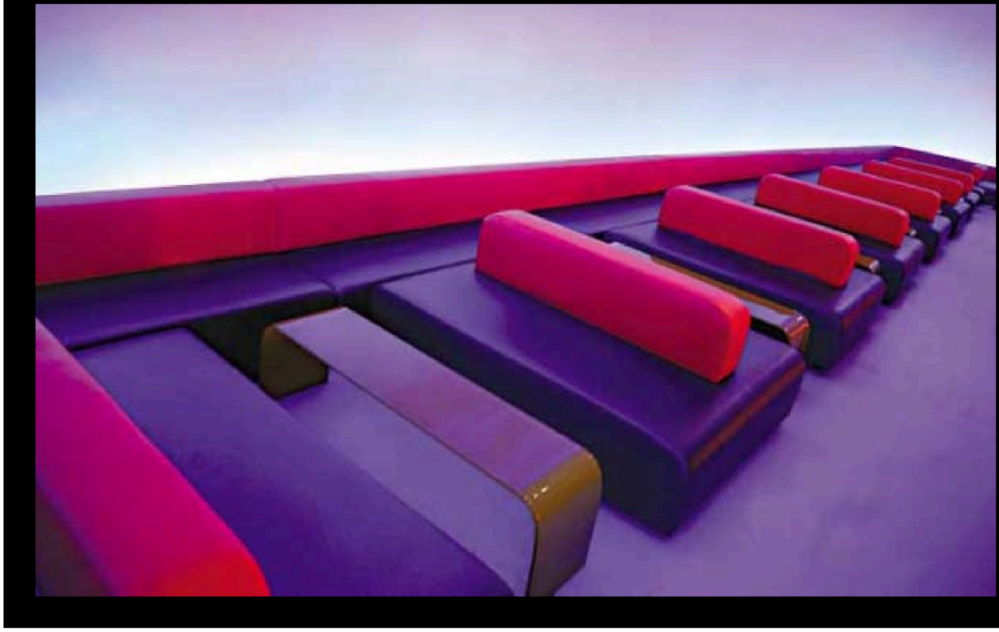

Lighting the back wall, striplights behind the banquettes produce an even wash of light from floor to ceiling (left and below left). Colors shift in gradual fades. Mounted below risers, T8 fluorescents with color sleeves add sparkle to the bar (below right).

PHOTOGRAPHY: © FRANK OUDEMAN (FAR RIGHT); RAMIN TALAIE (LEFT TWO)

club in color "helps inspire clubgoers to feel a connection with the space."

In the entry stairway, guests are welcomed into a corridor whose walls have been painted pink and then accented from above with track-mounted MR16 fixtures. Tucked in a pocket at the rear of each stair tread, single-lamp T8 fluorescent strips with pink filters guide guests up the stairs while intensifying the mood.

Farther inside the club, vertical surfaces and the curved perimeter walls are bathed in smooth washes of colored light, reinforcing the illusion of boundlessness. Because the design concept required the back wall to be illuminated with fixtures concealed within the 10-inch-wide trough behind banquette seating, mock-ups were conducted with a 10-foot-tall foam core model and plaster to determine the arc and finish of the wall and to find a lamp whose beam performance and reflector would ensure uniformity from floor to ceiling.

As a result, MR16 striplights equipped with red, green, and blue dichroic filters are integrated into the architecture to light the back wall, arches, and other vertical surfaces. The fixtures cycle slowly through a spectrum of colors, ranging from rich ambers and reds to lavender and turquoise. For the larger portal openings surrounding the dance area, color-changing wall washers lamped with metal-halide sources are recessed in the floor.

MR16s also add visual interest to the dance floor, where they are recessed in steps and along the edge of the floor. In a bar area, the fixtures suffuse a series of ceiling coffers with a golden glow. All MR16 lamps were specified with screw bases to facilitate maintenance.

"It's really the beauty of a sunset versus a starry night," says Gregory, comparing Powder to other clubs. "And you know how beautiful people's faces look in the pink and amber light of a sunset." ■

Sources

Custom MR16 socket strips: *Litelab*

Recessed MR16 fixtures: *Halo*

Framing projectors: *Theatrical Square Lighting*

Low-voltage linear lighting: *Lucifer Lighting*

Dichroic glass: *F.J. Gray & Co. Glass; High End Systems*

Fluorescents: *Lamar Lighting; Mercury Lighting*

Lamps: *Osram Sylvania; GE; Ushio*

Dimming controls: *ETC Lighting Controls*

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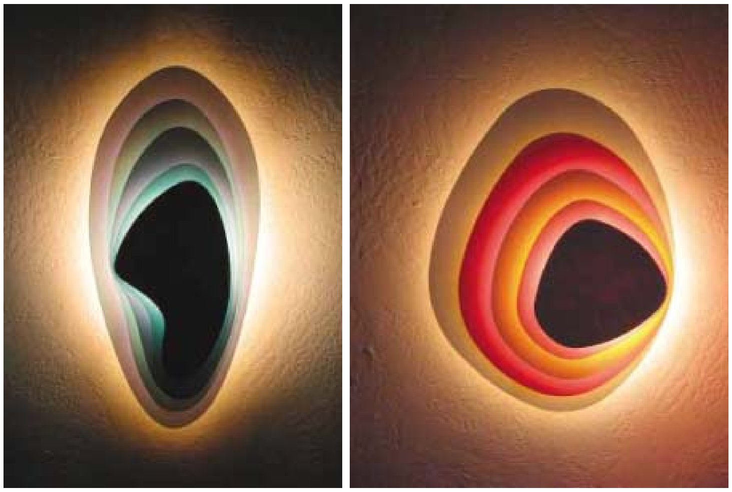


▲ Glowing landscapes

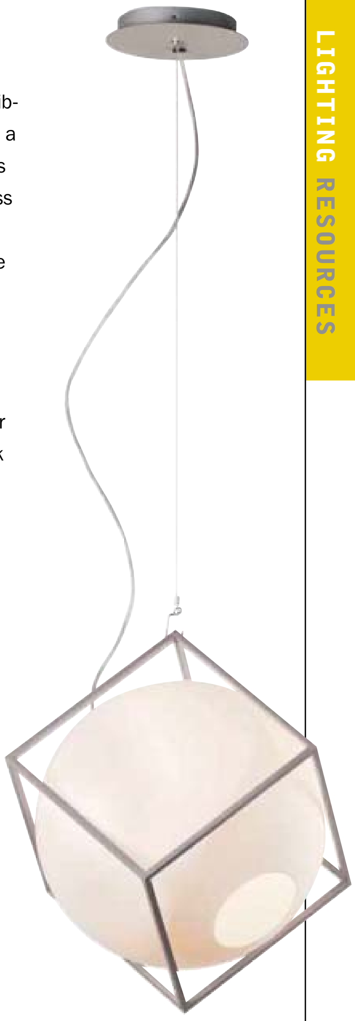
At this year's ICFF, blankblank launched the heliocentric lighting series, an extension of designer Rob Zinn's artwork based on a patented theory of reflective light. Zinn, who studied and taught at New York's Pratt Institute, has created surreal fixtures featuring layers of plastic and acrylic in elliptical shapes lit by 20-to-35-watt halogen lamps. All socket systems are UL-listed; the wall-sconce fixtures are planned to be listed as well. Custom colorways and sizes will be available for larger commercial orders. The company is currently developing a cylindrical floor and table light that will be available in modular sections. blankblank, Sacramento, Calif. www.blankblank.net **CIRCLE 200**

◄ Modern Murano glass fixtures

Alt Lucialternative, founded in 1963 as an art glassworks, currently produces hand-blown-glass light fixtures that blend traditional and experimental techniques. The Moody S pendant (top), designed by Manuel Giuliano, features chrome-plated metal and a blown crystal diffuser, partly glazed in two different sizes. Alt Lucialternative's sister company, Muranodue, is also linked to Murano's ancient glassmaking tradition. Muranodue's Blade fixture (bottom) is available in two hanging-lamp versions and a wall version. Designed by Paolo De Lucchi and Giorgia Paganini, Blade features an aluminum frame and glass-plate diffusers. Eurofase, Toronto. www.eurofase.com **CIRCLE 202**

▼► La bella luna

Oxygen Lighting's Lunetta family, produced in Spain, features a luminous frosted-glass sphere, a playful tribute to the moon. The pendant version (right) includes a thin, square, bent-steel-tube frame that looks as if it's floating in space on an angle, enclosing the 13½" glass orb. A thin aircraft cable runs down the center of the pendant from the canopy and holds the square frame with a satin nickel hook, while the pendant's cord is made to appear free-form. The Lunetta table lamp (below) is designed to be used as a small accessory item or luminous sculpture that can be placed on a shelf, desk, or table. The 6"-wide sphere sits off-center in a square metal cage on four legs. Oxygen, New York City. www.oxygenlighting.com **CIRCLE 201**



◄ Improving foreign relations

The LC-Euro Collection by Litecontrol features 16 products from four new European partners: Fagerhult of Sweden; Hacel of England; and Waco and Dark of Belgium. Made in the production facilities of the European companies, the lights are then shipped unassembled to the U.S., where Litecontrol reengineers and assembles every product to meet American standards. The Butt fixture from Waco (left) and the Juice light from Dark (below) are two examples of indirect/direct ADA-compliant wall fixtures available from the collection. Litecontrol, Hanson, Mass. www.litecontrol.com **CIRCLE 203**

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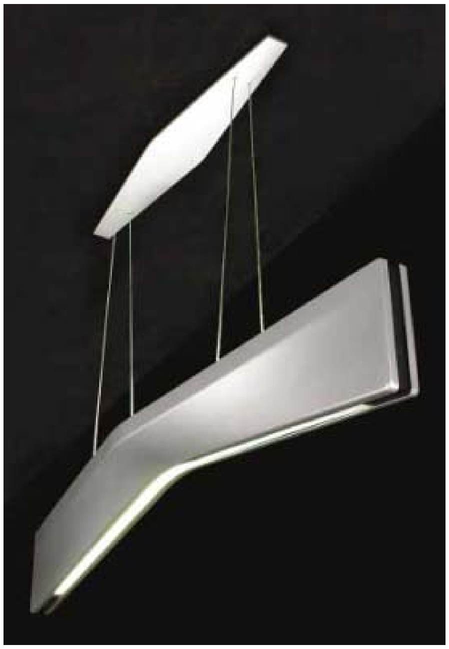
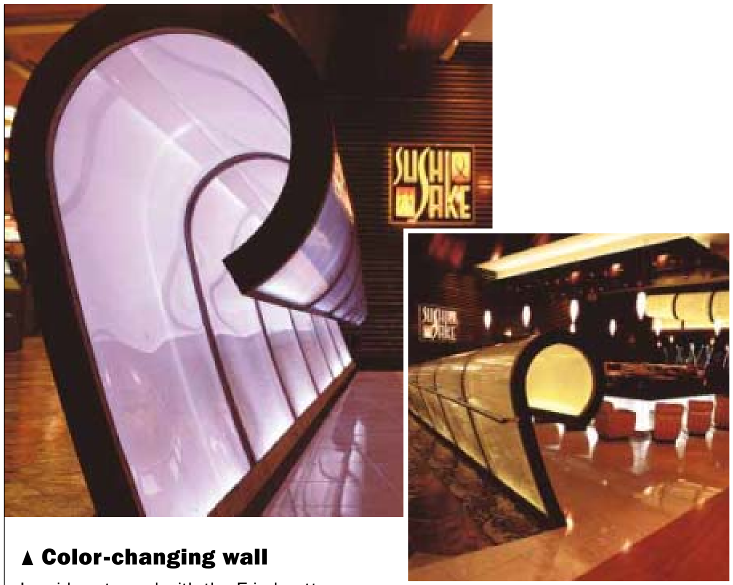
Lighting Products



► The first member of the family

Rotare is the first in a series of five new families from Ivalo Lighting that will be introduced in the next 16 months. Designed by the New York City–based architectural firm Lewis.Tsurumaki.Lewis, the direct/indirect pendant required a CATIA finite element analysis to successfully realize the demanding form. Rotare features a lustrous automotive paint surface and curves from a vertical at the ends to a horizontal in the center, following the sweeping rotation of a ruled surface. Rotare was designed with two T5HO lamps and a frosted lens that diffuses the downward component of the light. Ivalo Lighting, Willow Grove, Pa. www.ivalolighting.com **CIRCLE 204**



▲ Color-changing wall

Lumid partnered with the Friedmutter Group of Las Vegas and Kaplan Partners Architectural Lighting of Los Angeles on this cone-shaped, custom-made wall for the Sushi+Sake Restaurant at the Green Valley Ranch Casino in Henderson, Nevada. The luminous wall is composed of sections of translucent polymer, connected by joints of MDF and a steel structure and railing. Attached to the interior polymer surface is an optical film that picks up light from two illumination centers controlled through Lumid's internal DMX computer control system and Lightingtools LED technology. The wall measures 24" long x 4½" high x 36" wide and displays a spectrum of colors that change almost imperceptibly. Lumid, Montreal. www.lumid.com **CIRCLE 205**

PHOTOGRAPHY: © LYNN CAMPBELL FOR LUMID

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▲ Curvaceous options

The Arketto task light (left) features a flexible "swan neck" arm that allows users to position light precisely where it is needed. A shower-head-shaped light head with an integral reflector extends 6" from the front end of the arm, while a slender, non-heat-conducted stem at the base of the head allows easy, one-hand positioning of the light. The arm is covered in a heavy-duty, herringbone-patterned industrial textile available in black, blue, gray, or red. Another curvy option from Luxo is the Onda (top) direct/indirect pendant-suspended linear ceiling luminaire. Onda's wavelike design provides softly diffused, glare-free undulations of ambient direct/indirect lighting. Luxo, Elmsford, N.Y. www.luxous.com **CIRCLE 206**

▼ Lighting the great outdoors

Shaper, a division of Cooper Lighting, offers a new Architectural Outdoor series consisting of post-top luminaires, bollards, and companion wall luminaires. The Post Top series' shade options (left) range from traditional curved and truncated styles to architectural domes and double-wedge configurations. Invue Lighting Systems, also a division of Cooper, introduces the Icon architectural area luminaire (right). Icon offers solutions for full cutoff compliance, spill light control, and path of egress illumination, and is offered in two arm choices combined with multiple housing sizes and lamp options, and precision-built segmented optical systems. Cooper Lighting, Peachtree City, Ga. www.cooperlighting.com **CIRCLE 207**

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Lighting Products

▼ Light of the year

Awarded Best New Product of the Year at this year's Lightfair, io's Line (below) is a low-voltage linear accent luminaire that utilizes 1-watt, high-brightness LEDs. Available in 10-, 30-, and 60-degree, as well as asymmetric, beam distributions and lengths up to 108", Line is ideal for interior and exterior building-grazing or wall-washing effects and may be surface- or wall-mounted. Stick is io's solution for accent lighting from within tight architectural details. Ideal for niche, cove, handrail, and casework lighting, it may be ordered in incremental lengths from 6" to 96". io Lighting, Melrose Park, Ill. www.iolighting.com **CIRCLE 208**

◄ Pick the better switch

Aspire is a contemporary-styled line of electrical devices from Cooper Wiring Devices. With a signature curve motif and contrasting matte and low-gloss finish, the Aspire series comes in three distinctive, two-tone neutral color combinations: White Satin, Desert Sand, and Silver Granite. The concave shape of the switch guides the finger along the surface. Cooper Wiring Devices, Long Island City. N.Y. marketing.cooperwiringdevices.com/aspire **CIRCLE 209**

► Smarter skylight

Unlike passive skylights, the ADS-600 active daylighting system employs a mirror array that tracks the sun precisely throughout the year, directing light from the brightest part of the sky down and into interior spaces. The mirrors conduct low-angle sunlight efficiently, and also shade the intense light sometimes found at high sun angles. The system runs on energy generated by a single photovoltaic cell. So-Luminaire, Carlsbad, Calif. www.soluminaire.com **CIRCLE 210**

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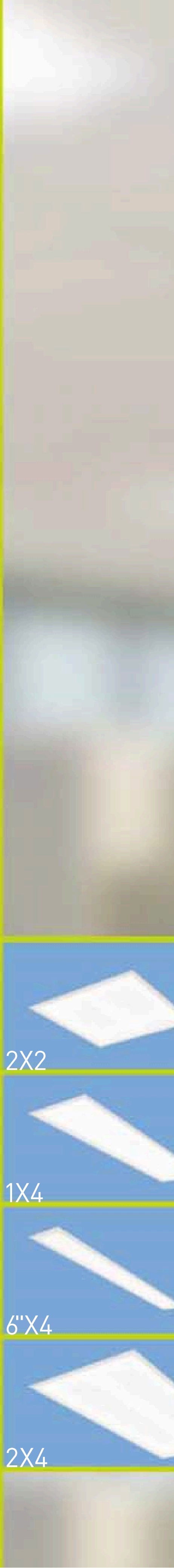

Lighting Products

► Energy-efficient retail lighting solutions

Along with Advance Transformer, Philips has introduced the smallest ceramic-metal-halide system in retail lighting. The new 20-watt Mini MasterColor (top) is 50 percent smaller than competitive products, offering retailers more design freedom and lower operating costs. The long life of the bulb (9,000 hours) means fewer lamps need to be changed, and the smaller size means it requires less packing, materials, mercury, and energy to make. Another new product for the retail market is the MasterColor CDM-R 111 (bottom), which brightly highlights retailer's product and window displays without glare while saving them money on energy and maintenance. Philips Lighting, Somerset, N.J. www.lighting.philips.com **CIRCLE 211**

► Next generation LED

Osram Opto Semiconductors has introduced its "lead-free" 2-watt Golden Dragon LED. Packaged in a proprietary surface-mount technology LED, the Golden Dragon LED is now available in a full spectrum of colors: red, yellow, green, blue, and standard white. The LED has an extremely low thermal resistance and a product life of more than 50,000 hours. Osram Opto Semiconductors, San Jose, Calif. www.osram-os.com **CIRCLE 212**

▲ Seamless lighting fixture

The Seamlessline T6 fluorescent integral lighting fixture offers "seamless" direct and indirect lighting. The fixtures can be installed in a line to create uniform brightness and eliminate dark zones. The UL-listed fixture offers an average lamp life of 20,000 hours, nine lamp colors, four ways of connecting, and line-voltage options of 120 or 277 volts. Featured in high-profile projects including the Roppongi Hills Mori Tower and the Grand Hyatt in Tokyo, Seamlessline won a Best of Category Award at this year's Lightfair. Nippo Electric, New York City. www.nippo-web.com/us **CIRCLE 213**

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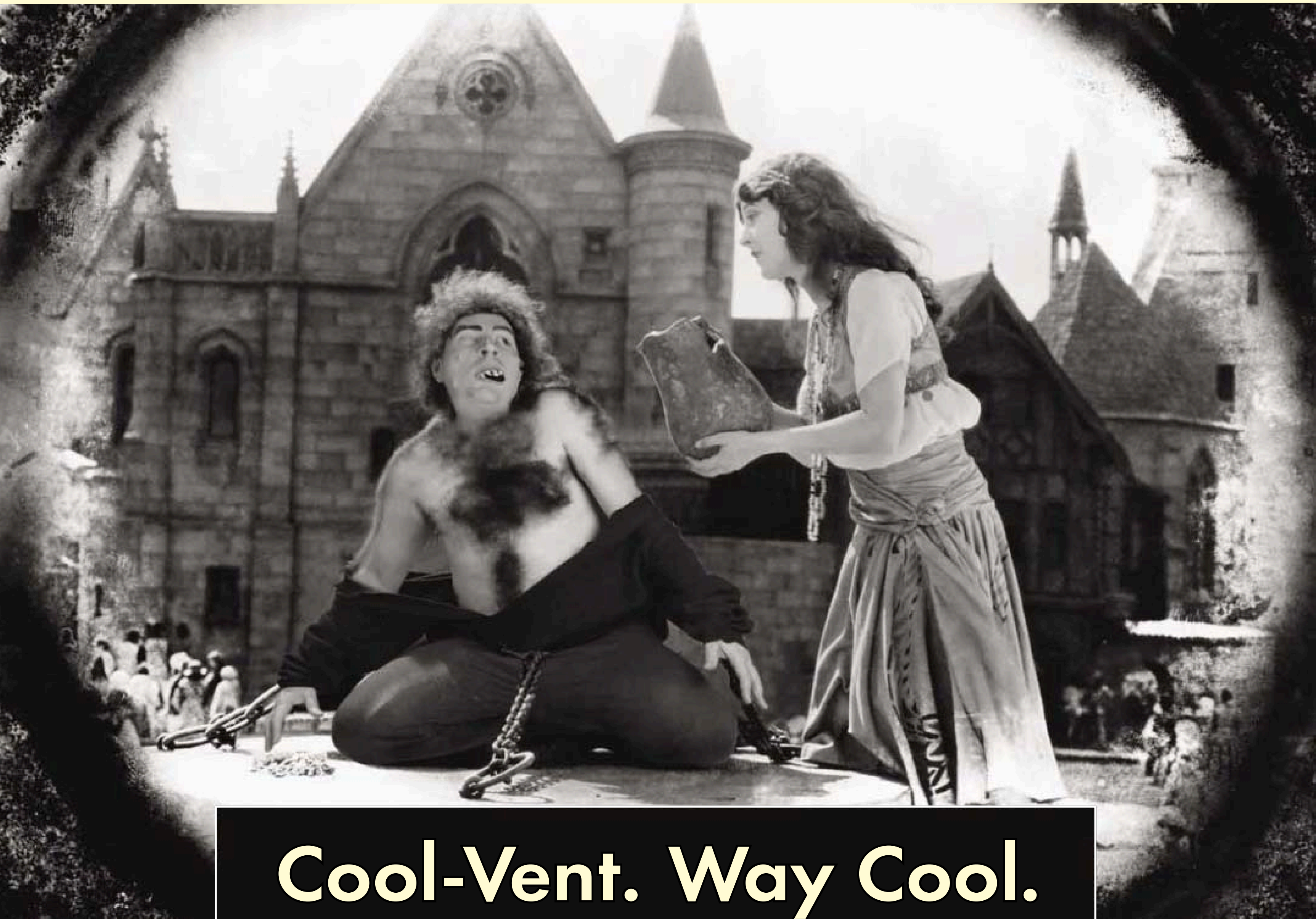

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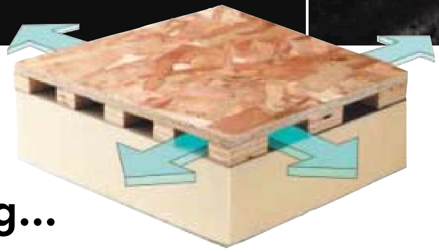

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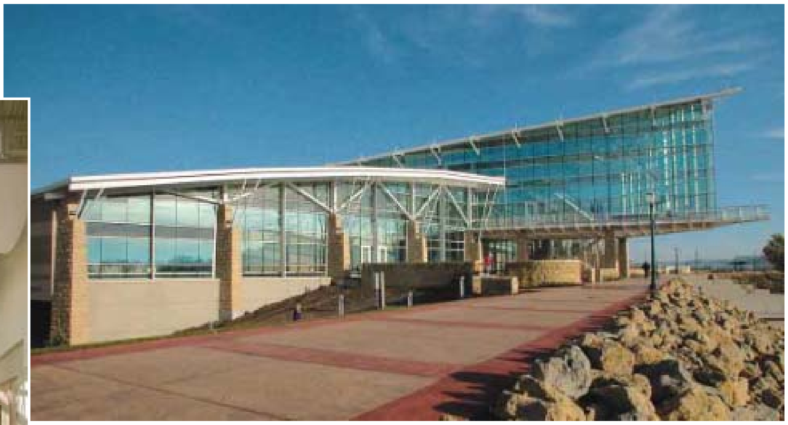
Products

Glass & Glazing

The **glass and glazing** options featured this month have a variety of attributes to help architects achieve the aesthetic or technical goals of projects ranging from medical centers to train stations. Energy-efficiency, privacy, and **products that maximize views and daylight** are common issues. *Rita F. Catinella*

Solar-control glass helps maximize the view of a riverside convention center



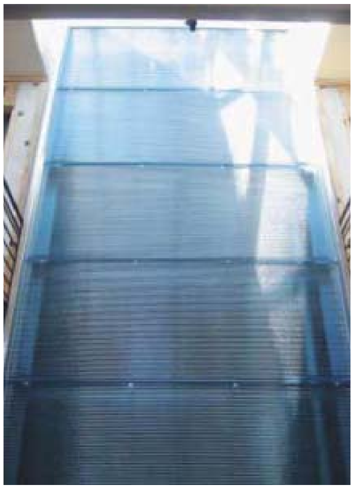
The Grand River Center is an 86,000-square-foot meeting and convention center located on the Mississippi River in Dubuque, Iowa. The building is a signature element in the city's larger America's River development, which also includes The National Mississippi River Museum and Aquarium, the Mississippi Riverwalk, and the Grand Harbor Resort and Waterpark. Designed by David Greusel of HOK Venue, Kansas City, Missouri, Grand River Center is designed to take advantage of its exceptional river views.

The center includes a 2,200-square-foot, special-purpose reception and meeting space that cantilevers dramatically over the river levee; a 30,000-square-foot exhibit hall; a 12,000-square-foot, multipurpose ballroom; and 12,000 square feet of divisible meeting-room space on two levels.

Dramatic glass walls, crafted from alternative bands of Solarban 60 and Solarban 80 Solar Control Low-E Glass from PPG, stretch from floor to ceiling. The two types of glass were selected for their solar control characteristics, which dramatically reduce heating and cooling costs while allowing for the transparency demanded by the building's riverside setting. PPG Industries, Pittsburgh. www.ppg.com **CIRCLE 214**

Blue glass waterfalls bring both light and serenity into a Brooklyn mausoleum

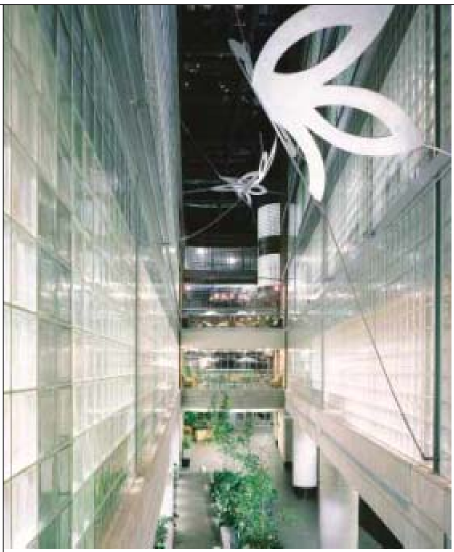
Artwork in Architectural Glass (AAG) supplied 32 Wide Spartina texture cast-glass panels, measuring 106" x 47" each, for two waterfalls in a mausoleum at the Green-Wood Cemetery in Brooklyn, New York.



The glass texture prevents splashing.

The texture of AAG's ⅜"-thick Wide Spartina panels was developed specifically for waterfall applications—the water runs smoothly from one deep-blue, ribbed-glass panel to the next, eliminating any splashing or spitting issues. The project was completed last March by architect David Grider of Platt Byard Dovell White in New York City in collaboration with Lynbrook Glass & Architectural Metals, of Hauppauge, New York.

According to Grider, the waterfall not only relates directly to the shingled-glass treatment of the facade, but "acts like a prism to capture and reflect both sunlight from above and incandescent light from below," diminishing the sense that the visitor is several floors below grade. AAG, Good Hope, Ga. www.artworkinglass.com **CIRCLE 215**



The Hillman Center's atrium.

Glass block links five-story medical center

The Hillman Cancer Center is the University of Pittsburgh Medical Center's flagship cancer treatment and research facility. The designers of the 350,000-square-foot facility, IKM Incorporated, were faced with the challenge of creating a space that would be warm and comforting enough for patient care while remaining a highly functional research facility. To accomplish this goal, IKM linked the patient care pavilion with the research pavilion via an atrium spanning five stories. The atrium uses Pittsburgh Corning glass block to create a separation between the research and clinical wings, allow natural light to penetrate all the floors and both pavilions, and create appropriate levels of transparency and privacy for the treatment, laboratory, and office areas. Pittsburgh Corning Glass Block, Pittsburgh. www.pittsburghcorning.com **CIRCLE 216**

PHOTOGRAPHY: © COURTESY DAVID GREUSEL/HOK VENUE (TOPTWO)

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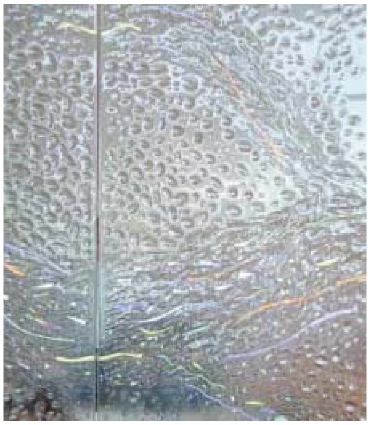
Products Glass & Glazing

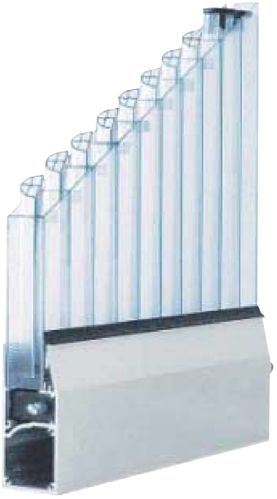
► Fire-rated door-glass option

Marshfield DoorSystems now provides PyroEdge-20 fire-rated clear glass as part of its Expressions del Sol factory-installed glazing collection. Tested and rated to meet or exceed all local, regional, state, and federal code requirements, PyroEdge-20 fire-rated glass offers a clear ¼" tempered glazing, rated for 20-minute positive and neutral pressure applications without hose stream testing. The glass is distortion-free and up to 10 times stronger than wired glass. Like other Expressions del Sol glazing options, it can be etched to feature custom artwork or logos. Marshfield DoorSystems, Marshfield, Wis. www.marshfielddoors.com **CIRCLE 217**

▼ Pushing the cast-glass envelope

A cast-glass sculptural wall for the American College Testing headquarters in Iowa City, Iowa, designed by Flad & Associates of Madison, Wisconsin, was an ambitious project for Meltdown Glass. The 22 panels of ½" tempered glass, which weigh 300 pounds each, were cast to form a single flowing composition with fused dichroic glass. Several of the panels are movable and recess into the wall to allow access from a conference area to an eatery for employees. Meltdown Glass Art & Design, Chandler, Ariz. www.meltdownglass.com **CIRCLE 219**



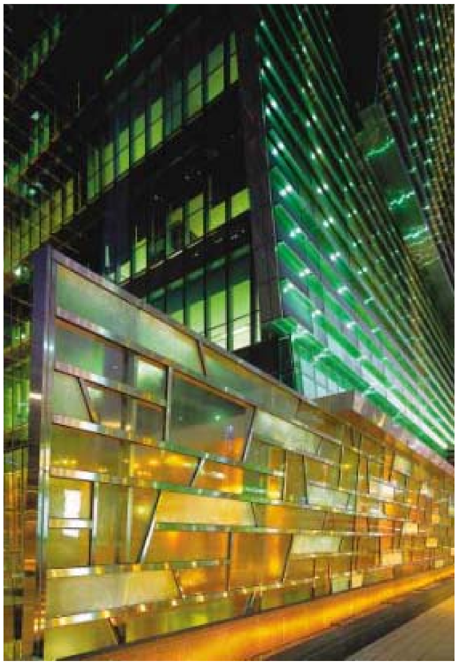


◄ Adjustable glazing system

Controlite panels consist of proprietary translucent half-cylinder Rota-blades built into translucent, light-transmitting polycarbonate panels. When fully open, they allow for a maximum of 60 percent light transmission; when closed, they allow a minimum of 6 percent. The angle of the Rota-blades is completely adjustable through a manual, motorized, or a fully automated system that works automatically to maintain the desired light level throughout the day. CPI, Lake Forest, Ill. www.cpidaylighting.com **CIRCLE 221**

► Custom window film

GlassFilm Enterprises offers a custom-designed window film that enables graphic and photographic images to be converted into a decorative film for interior or exterior glass. The material is created using a proprietary ink-to-film process, which allows for color, black, or white images. Film resembling intricate ironwork was used as a privacy screen and window decoration for The Butcher Shop wine bar in Boston (right). Also available from GlassFilm is Lumisty, a film that morphs from transparent to translucent as the angle of view changes. GlassFilm Enterprises, Boston. www.glassfilmenterprises.com **CIRCLE 218**



◄ Canadian crafted curtain wall

Mon-X is a Canadian company that provides a range of products, including entrances, sconces, railings, and columns, in materials such as custom glass, stainless steel, bronze, and aluminum. Shown here is a glass wall for the Dongbu Kangnan building in Seoul, designed by Kohn Pedersen Fox Associates of New York City. The wall covers an area of approximately 3,445 square feet and is composed of ½"-thick thermofused glass set in a stainless-steel curtain wall. Mon-X, Montreal. www.monx-international.com **CIRCLE 220**

► Powerful photovoltaics

RWE Schott Solar's semitransparent building-integrated photovoltaic panels for windows, facades, and skylights lower energy costs, provide glare protection, supply heat insulation, and reduce greenhouse gases. Independent studies show that the thin-film panels provide 20 percent more energy per rated wattpeak unit than other solar-cell technologies. The frameless panels have been integrated into the New York City's Stillwell Train Station canopy—the largest thin-film solar project realized in North America. Schott N.A., Elmsford, N.Y. www.us.schott.com **CIRCLE 222**

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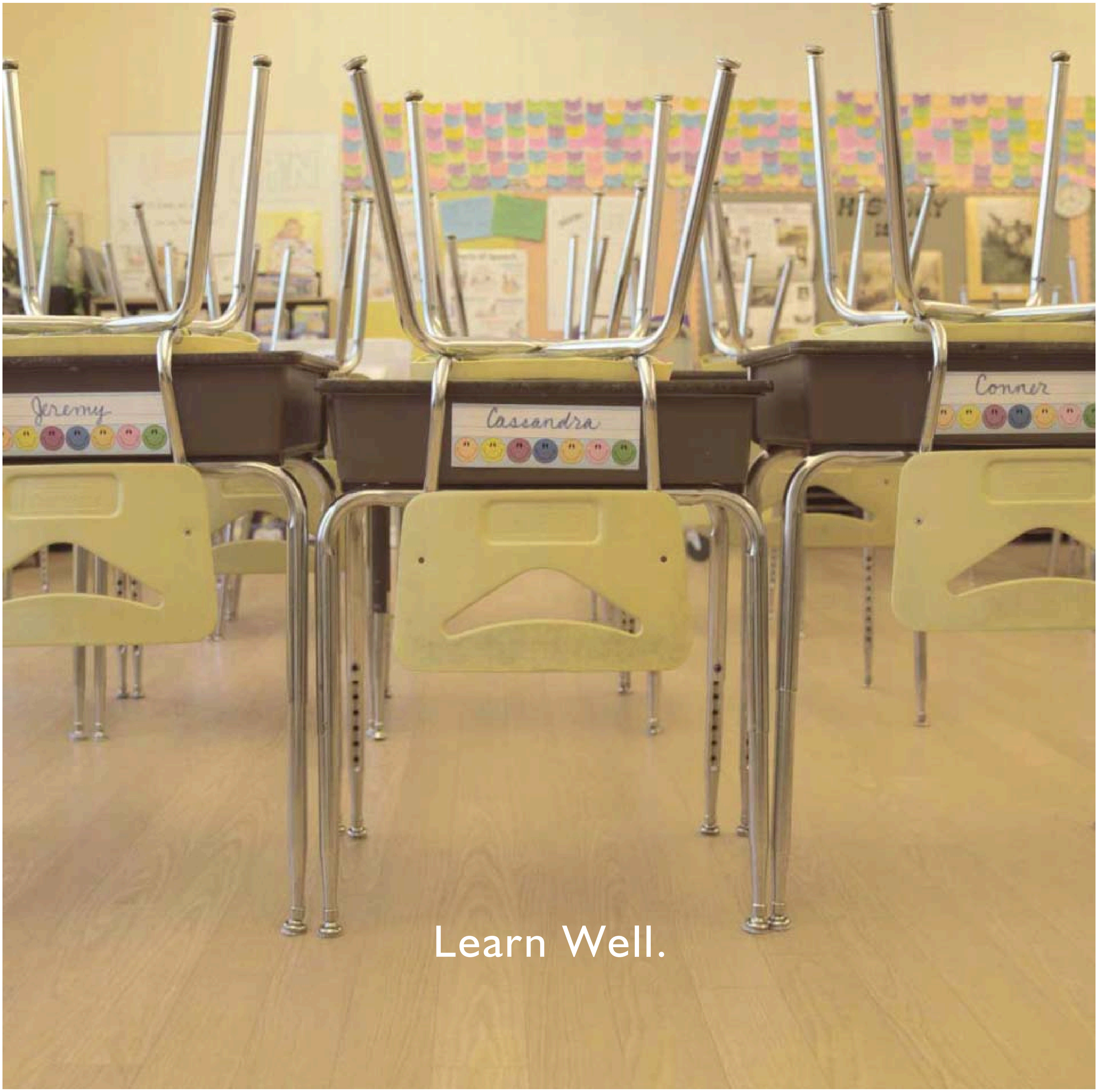

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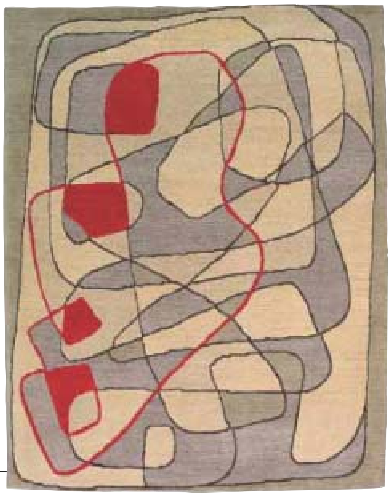
Product Briefs

► Carpet couture

During the Milan Furniture Fair, Post Design launched Life's Commodities 2.004, a new collection of carpets handmade in wool by Nepalese craftsmen and featuring the visions of designers such as Massimo Iosa Ghini (right), Alessandro Mendini, and Karim Rashid. Each carpet is produced in a limited edition of 36. Upon request, carpets may be manufactured in a different size proportional to the standard size. Post Design, Milan. www.memphis-milano.com **CIRCLE 223**



▲ Security at the touch of a finger

Glide's clever range of products includes a solid teak cutting board that incorporates a digital scale inset into its flip side. The company's Mod Filing Cabinets (above) use a fingerprint sensor to control access to locked drawers. Each is individually controlled so users can be granted access to a single drawer, several drawers, or entire cabinets. Multiple cabinets can be controlled wirelessly by a single fingerprint sensor to create a complete and secure office system. Glide, New York City. www.glide-inc.com **CIRCLE 225**

▲ Chicago-style carpet

Introduced in its namesake city during Neocon, Masland Contract's Chicago Collection of commercial carpet is inspired by the rich urban landscape of Chicago. Designed by Eva Maddox and Eileen Jones of Perkins & Will, the seven styles of the collection interpret the city's defining elements, from Chicago-style windows to its park systems and bridges. It is available in 10 colorways for corporate environments. Masland Contract, Mobile, Ala. www.maslandcontract.com **CIRCLE 227**

Product of the Month
Ecoveil Solar Shade Cloth

After six years in development, MechoShade Systems has launched the EcoVeil solar shade cloth, created with assistance from the sustainable-product development firm MBDC. Incorporating a new material constructed with a thermoplastic olefin-based yarn called EarthTex, EcoVeil can be recycled into new shade cloth as well as other EarthTex-based products, a process made easier once MechoShade implements a planned "take back" program for the shades. EcoVeil's coating, or "jacket," is essentially the same polymer as the core yarn, which allows it to be melted down, reprocessed, and made into new product. Traditionally, solar shade cloths are hybrids of a PVC jacket and fiberglass or polyester core yarns, which are combined into an unusable "muddy hybrid" that cannot be separated for reuse. MechoShade Systems, New York City. www.mechoshade.com CIRCLE 224

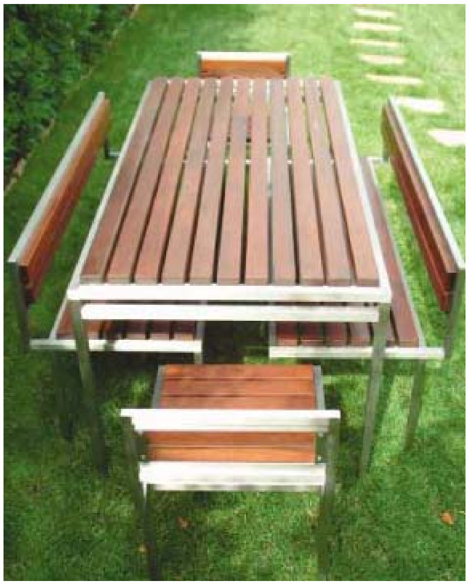
◄▼ Mining their assets

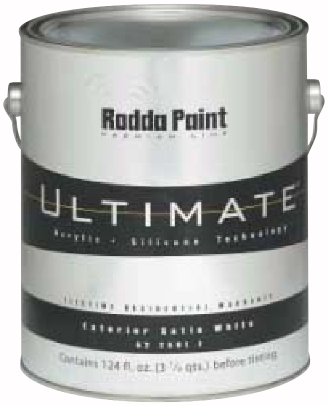
Harter has a new image—and a new collection of products to go with it—that reflects the clean-lined, functional furniture offered by the company in the 1950s through '70s. Harter has invited several designers to update the best of their past designs—including the multipurpose tables and lounge chairs shown here—using new technology and materials adapted to today's multifunctional workplaces and lifestyles. Harter, Middlebury, Ind. ww.harter.com **CIRCLE 226**

Product Briefs

▼ Outdoor furniture that's environmentally conscientious

All of the pieces in Modern Outdoor's furniture line are made from electropolished stainless steel; natural-composite-resin-infused paper surfaces; and Forest Stewardship Council–certified Ipe, a Brazilian hardwood that is three times as hard as teak. Three distinct lines comprise the collection, and each is suited for residential, hospitality, or public spaces. The Etra line, with its larger plank style, includes a table, bench, chaise longue, trolley cart, and four chairs; Kenjii, which features smooth slatelike black tops, includes a table, bench, and planter; and Talt (left), with its low-back aesthetic, includes tables, benches, a chair, side table, chaise longue, and trolley cart. Modern Outdoor, Lake View Terrace, Calif. www.modernoutdoor.com **CIRCLE 228**

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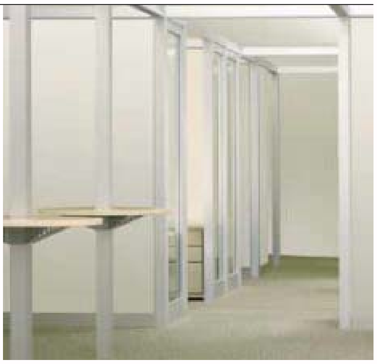

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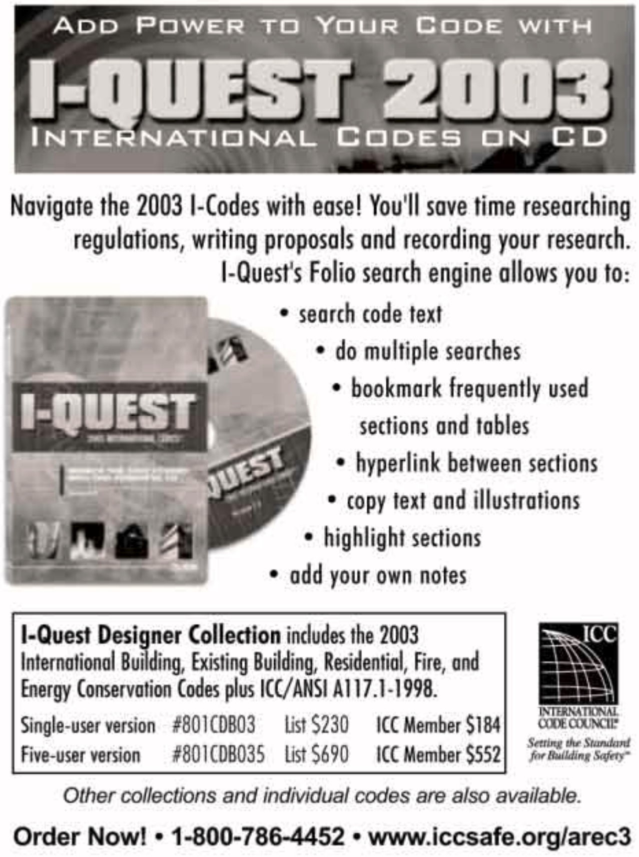
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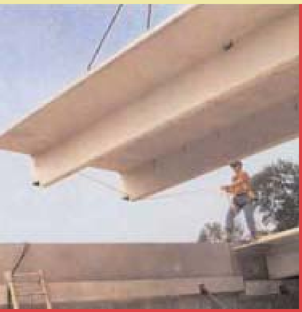

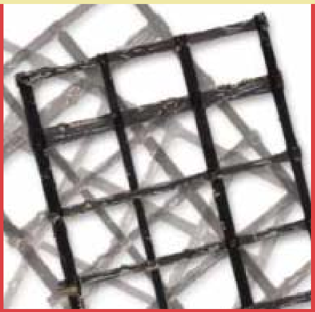

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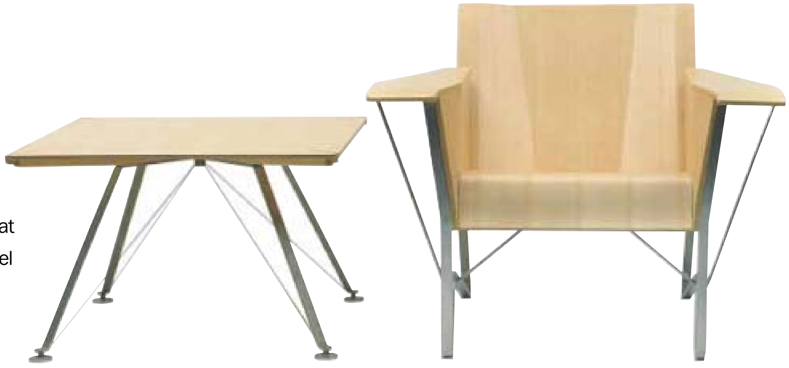
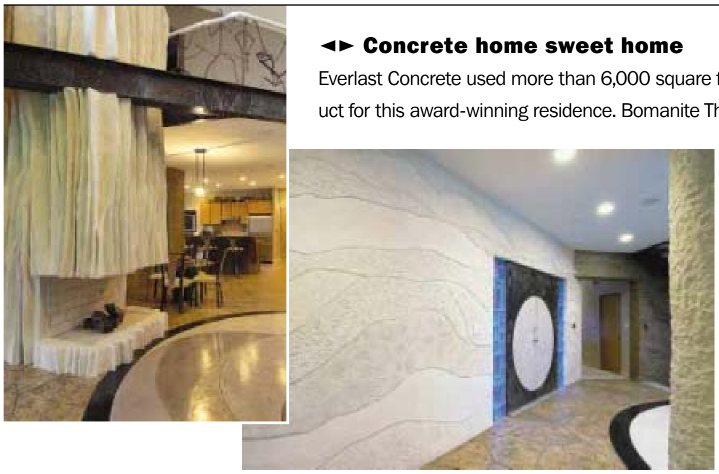


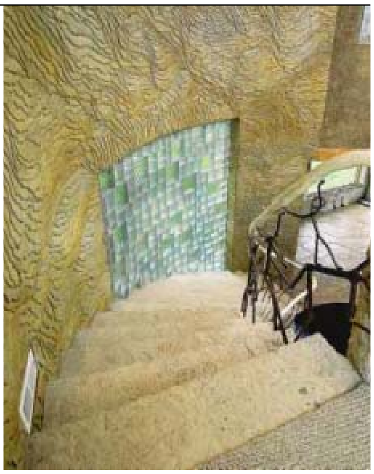
► An update for a classic chair

The prototype for Nienkämper's HAB chair, designed by Toronto-based architects Brigitte Shim and Howard Sutcliffe, was a custom commission for a narrow boathouse residence that required the traditional Adirondack chair translated into a modern furnishing. An angular steel base supports a veneered, molded-maple-plywood version for indoor use or a folded aluminum version for outdoor use. The collection also includes a range of veneered maple-plywood-topped tables. Nienkämper, Toronto. www.nienkamper.com **CIRCLE 231**



◄► Concrete home sweet home

Everlast Concrete used more than 6,000 square feet of Bomanite architectural concrete product for this award-winning residence. Bomanite Thin-Set, a polymer topping normally installed at a thickness of ⅜", was troweled on walls, fashioned into railing, layered to create a fireplace surround, and hand-sculpted to produce a wall that doubles as Modern art. Bomanite Micro-Top, a paper-thin cementitious material, was used to express the homeowner's vision for the foyer floor, while Patène Artectura stains were applied on nearly every surface of the home. Bomanite, Madera, Calif. www.bomanite.com **CIRCLE 232**



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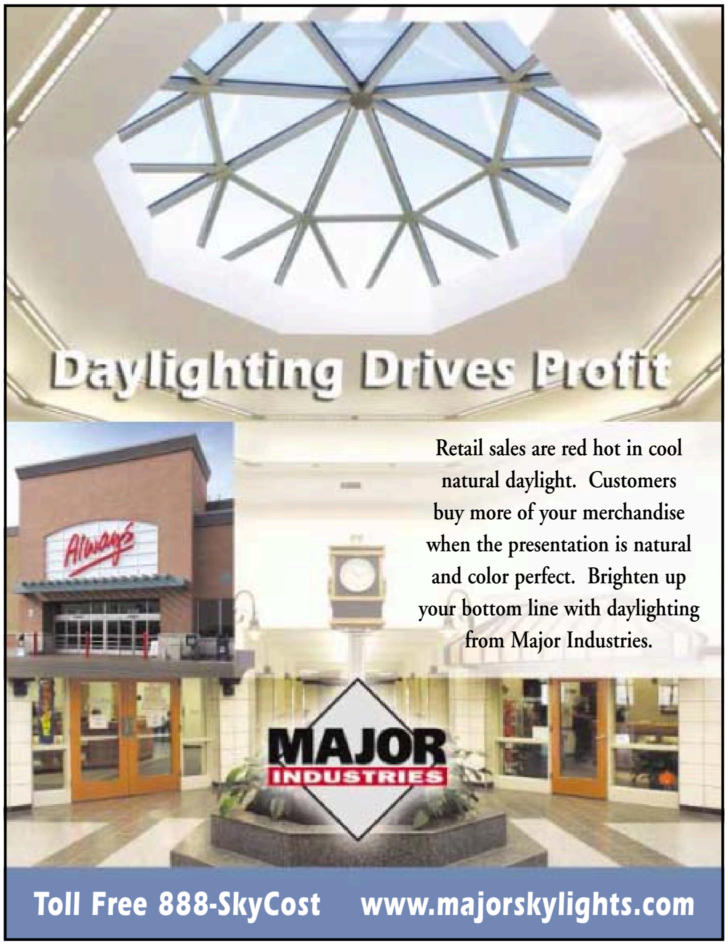

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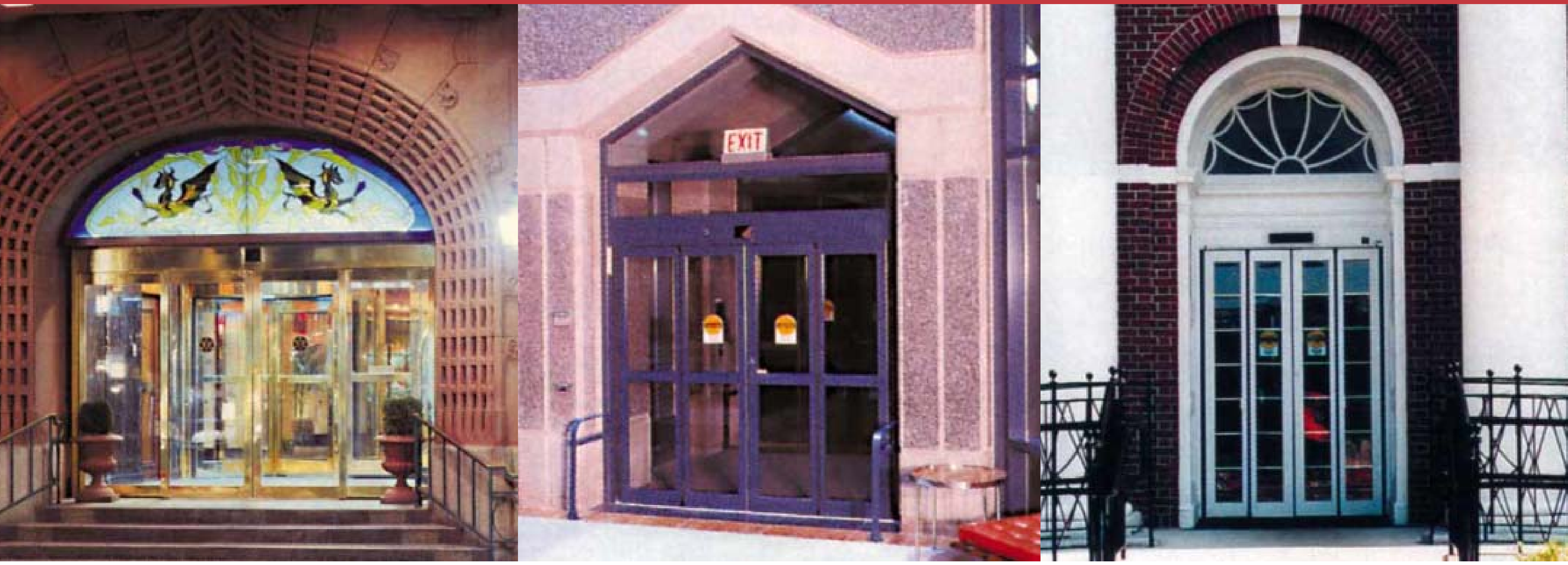

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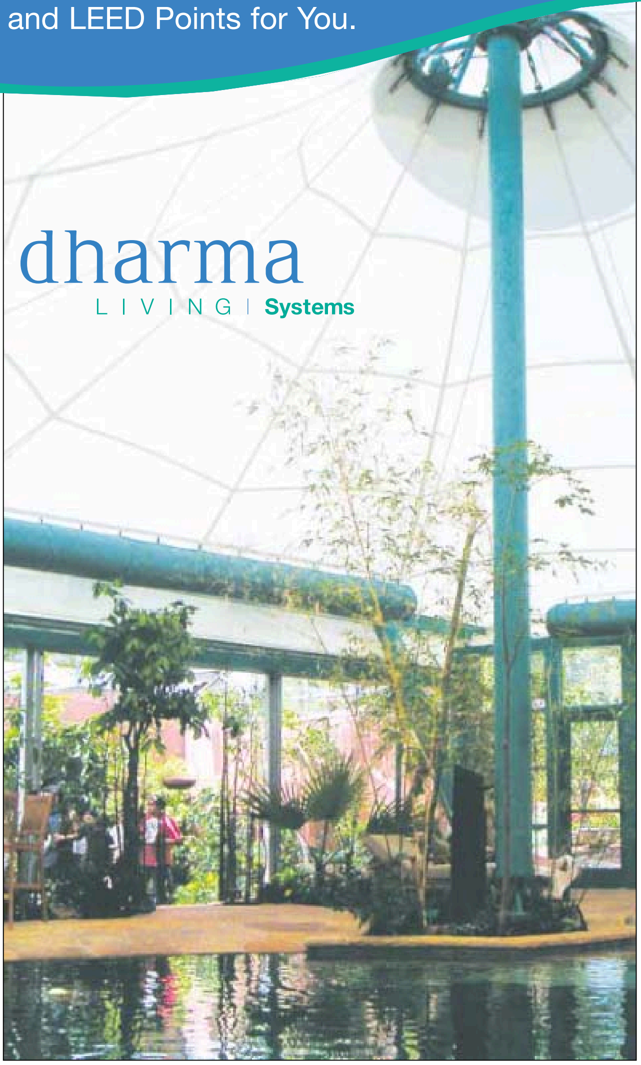

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Product Literature

Bathroom equipment catalog

Bobrick has released its 2004 catalog featuring the introduction of several products in the company's new line of Sierra Series Toilet Partitions. Bobrick Washroom Equipment, North Hollywood, California. www.bobrick.com

CIRCLE 233

Project photography book

HessAmerica has released *Hess USA References*, a 108-page book containing day and night photographs of notable lighting installations completed across the United States. HessAmerica, Gaffney, S.C. www.hessamerica.com/references

CIRCLE 234

Easy-to-use product guide

The layout of Litecontrol's new product guide allows readers to easily access the product name, catalog number, mounting, distribution, general product information, and online Quick Find number for a range of products in a variety of categories, including suspended indirect, wall-mounted, recessed, and perimeter lighting. Litecontrol, Hanson, Mass. www.litecontrol.com CIRCLE 235

NEW SITES FOR CYBERSURFING

This site showcases the work of young Australian product designers **www.melbourne-movement.org**

The InPro JointMaster Wizard helps specifiers determine the right architectural joint system **www.inprocorp.com**

An interactive site for designers to find innovative material solutions **www.eastmaninnovationlab.com**

This useful online glass resource includes a performance data calculator **www.oldcastleglass.com**

Interactive training program

The *Building Better Homes* interactive training program is based on the principles taught by building science expert Mark LaLiberte. For nearly 20 years, LaLiberte has conducted training sessions to help builders, architects, and remodelers learn to avoid hundreds of common construction callbacks and warranty claims. Building Knowledge, Minneapolis. www.buildingknowledge.net CIRCLE 236

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Product Literature

Fluorescent buyer's guide

Holophane has announced a new line of Optically Engineered fluorescent luminaires with the introduction of its new *2004 Fluorescent Buyers Guide*. The new guide features the latest designs and technology for task-specific, energy-efficient lighting in the industrial "Big Box" retail, gymnasium, convention center, and commercial markets. Holophane, Newark, Ohio. www.holophane.com **CIRCLE 237**

Marble history brochure

Georgia Marble has released a new brochure on the history of the 120-year old company. The brochure, titled *Georgia Marble, American's True Stone Source*, includes modern and historic photos of the company's quarries, as well as color photos of prominent projects the company has worked on, including the Lincoln Memorial, The New York Stock Exchange Building, and Chicago's Buckingham Fountain. Georgia Marble, Tate, Ga. www.polycor.com/html/en/mar_f.htm **CIRCLE 238**

Color collection brochure

Leviton's 40-page *Day and Night/Night and Day Designer Color Collection Brochure* features the company's broad line of Decora designer-style and select traditional wiring devices in classic almond color and black. Leviton Manufacturing, Little Neck, N.Y. www.leviton.com **CIRCLE 239**

20th-anniversary catalog

In conjunction with the introduction of hundreds of new designs and the celebration of its 20th anniversary, W.A.C. Lighting has unveiled a 176-page catalog that features accent, task, ambient, and decorative lighting for the industry. Also available is a miniature version of the catalog and one that is CD-based for both MAC and PC platforms. W.A.C. Lighting, Garden City, New York. www.waclighting.com **CIRCLE 240**

Urethane millwork catalog

The comprehensive new catalog from Style Solutions features the addition of 223 new sizes and styles of urethane millwork pieces and 227 entirely new products. The 300-page catalog is broken into six product sections and also includes information on adhesives, customer service, delivery, and detailed installation instructions. Style Solutions, Archbold, Ohio. www.stylesolutionsinc.com **CIRCLE 241**

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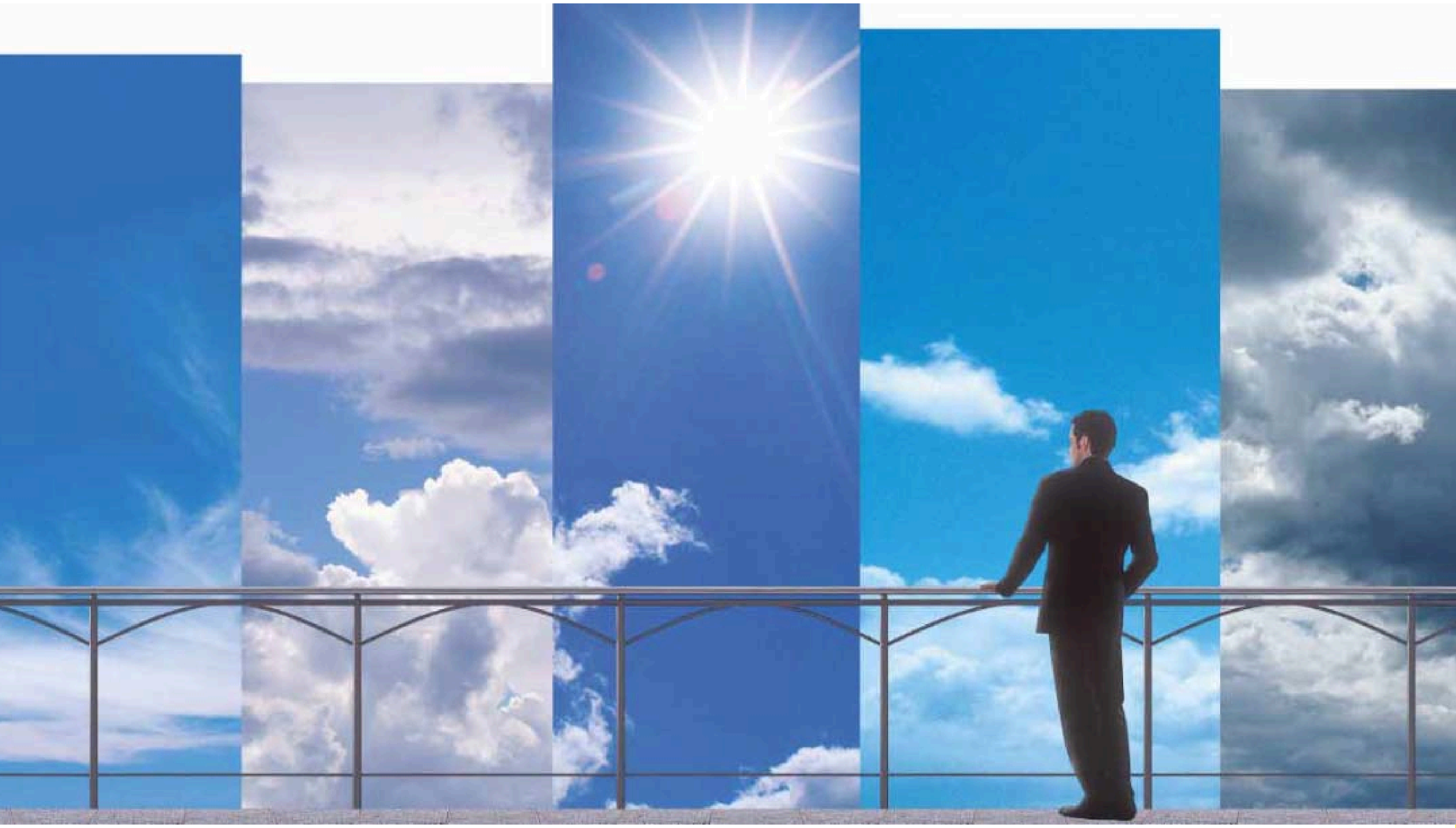

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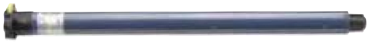

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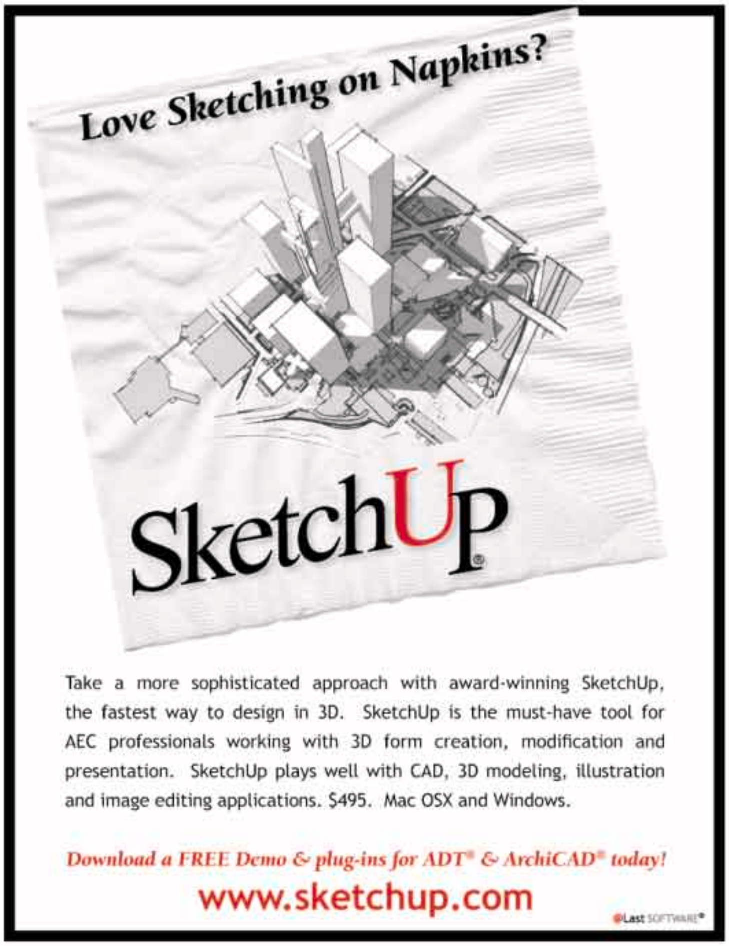

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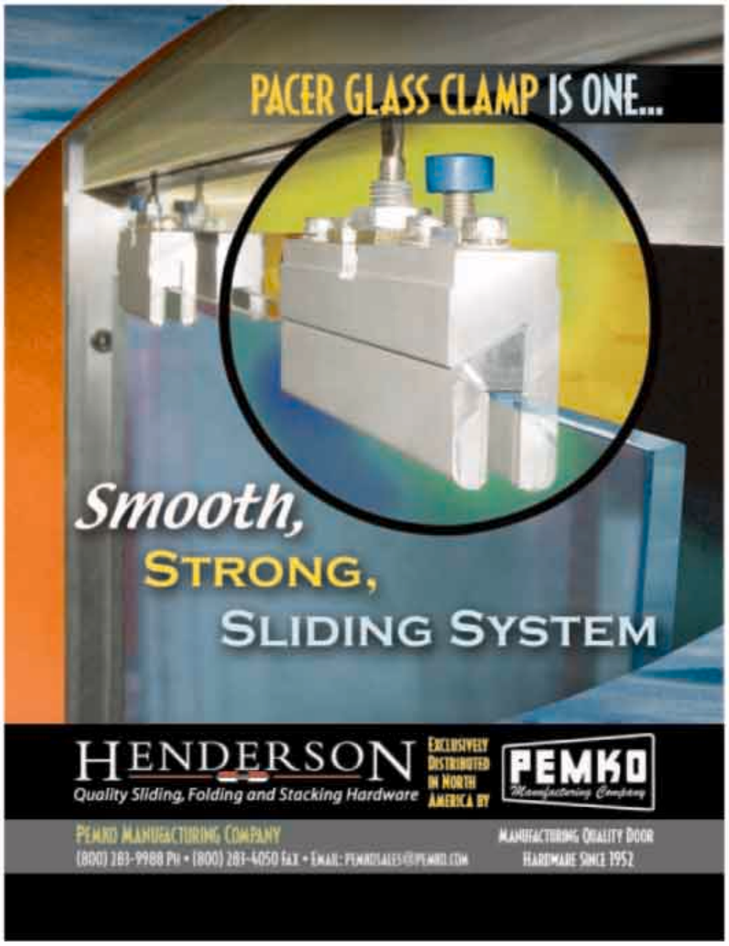

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TO RECEIVE INFORMATION PLEASE ANSWER ALL QUESTIONS

1. What is your job function? (check one)
- ☐ (1) Architect
- ☐ (2) Engineer
- ☐ (3) Designer
- ☐ (4) Specification Writer
- ☐ (5) Interior Designer
- ☐ (6) Contractor or Builder
- ☐ (7) Lighting Designer
- ☐ (8) Other ____________

2. In what type of organization do you work?
- ☐ (9) Architectural or A/E Firm
- ☐ (10) Commercial, Industrial or Institutional
- ☐ (11) Contractor or Builder
- ☐ (12) Government Agency
- ☐ (13) Interior Design
- ☐ (14) Lighting Design
- ☐ (15) Other ____________

3. Building Types you are currently working on?
- ☐ (16) Commercial
- ☐ (17) Educational
- ☐ (18) Healthcare
- ☐ (19) Industrial
- ☐ (20) Multi-Family Residential
- ☐ (21) Single-Family Residential
- ☐ (22) Other ____________

4. Reason for Inquiry?
- ☐ (23) Current Planning
- ☐ (24) Future Planning
- ☐ (25) Both

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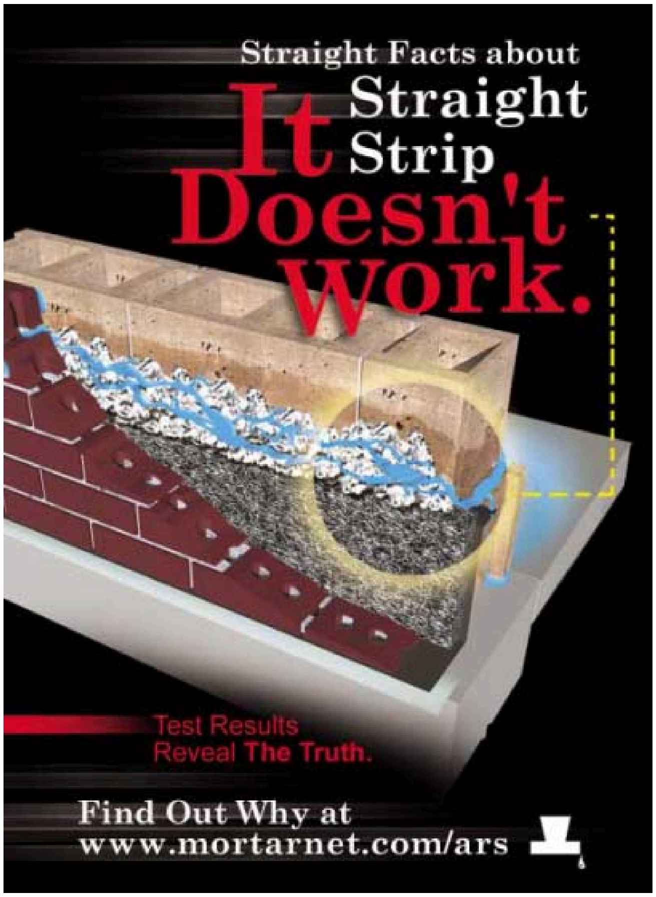

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Program title: **"Color & Texture," a multi-sponsor Continuing Education Section, (08/04, page 153)** **084SPONN**

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3.	a	b	c	d	**8.**	a	b	c	d
4.	a	b	c	d	**9.**	a	b	c	d
5.	a	b	c	d	**10.**	a	b	c	d

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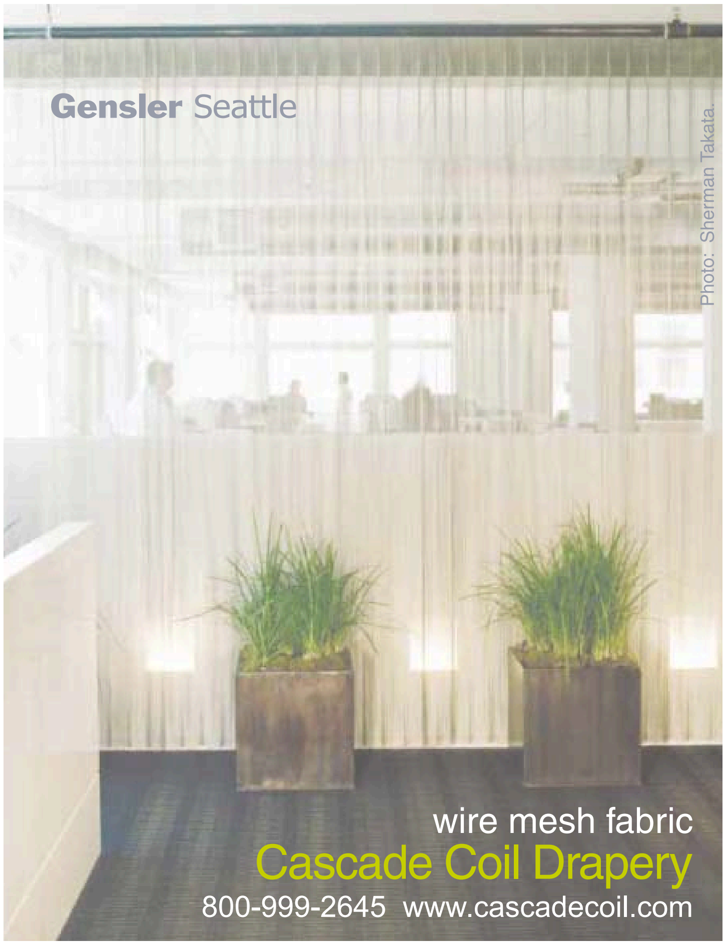

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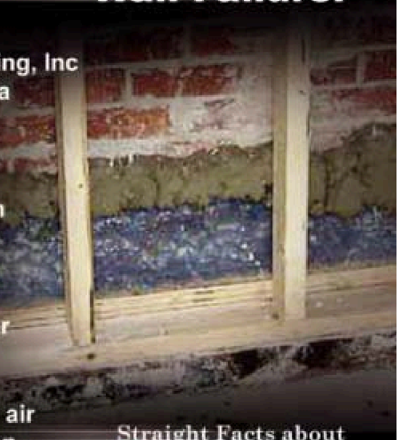
Straight Strip Tests Prove Wall Failure.

April 2004
Architectural Testing, Inc
York, Pennsylvania



We're making it public. Tests were conclusive in determining that straight strip products serve only to dam mortar droppings higher up in the cavity. This inhibits good air flow and ventilation and could result in water damage or even mold growth.

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G Squared Art

Architectural Ceiling Fans & Lighting 877-858-5333

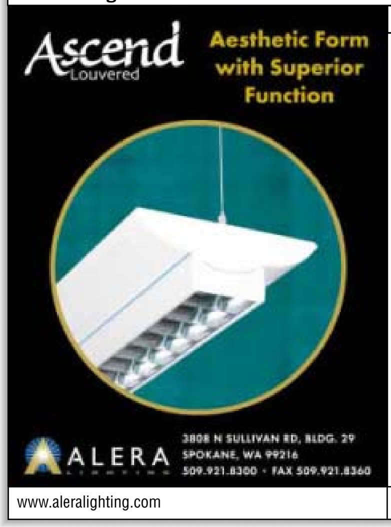
15 Mechanical

Balanced design that pleases the eye, creates a mood, a gentle breeze. Moving sculpture. The San Francisco ceiling fan—a GOOD DESIGN Award winner. Whisper quiet, powerful, and beautifully made, this timeless design is available with or without a light. Versatile—can be used on 8-ft. ceilings with optional 6-in. downrod or on cathedral ceilings with downrods up to 6-ft.-long. Suitable for sloped ceilings of up to 29°. Lifetime warranty. To buy high-design architectural fans and lighting, please visit G Squared's Web site or call between 6 A.M. and 6 P.M. PST.

www.g2art.com 🔄 150

Alera Lighting

Louvered Light



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SPOKANE, WA 99216
509.921.8300 · FAX 509.921.8360

16 Electrical

Ascend Louvered offers a softly curving shape which incorporates a high performance direct component increasing efficiency and versatility across design platforms. Along each side of the length a subtle glow strip may be accented with ScreenArt™ colors if desired. An anodized aluminum louver conforms to strict specifications for superior control of the direct light element. Suspended or wall mount products available for single or continuous row mounting. Uplight and downlight may be dimmed or independently switched. Mix and match T8, T5, and T5HO linear sources. 10-in.-wide, 3-5/8-in.-high. Applications include boardrooms, videoconferencing areas, offices, schools, lobbies, and high end retail.

www.aleralighting.com 🔄 151

Engineered Lighting Products

Compact Downlights 626-579-0943

16 Electrical

New "Hole in the Ceiling" Downlights. These innovative fixtures utilize compact fluorescent, incandescent, or metal halide lamps. The GRG (fiberglass reinforced gypsum) casting has integral electrical components, which are accessible through the bottom of the fixture. Installed, it looks like a custom formed drywall light niche that blends with any interior motif. UL/CUL listed.

🔄 152

ETC Architectural

Lighting Control Systems

ETC
Architectural

16 Electrical

On ETC Unison® architectural lighting control systems, the good stuff is standard. The extras you have to pay extra for on other architectural lighting systems are included on basic Unison systems. Unison's standard features include tool-free modularity, topology-free wiring, and 120/277-voltage options; dimming and switching for fluorescent, incandescent, neon, cold-cathode, low-voltage, non-dims, and relay loads; theatrical, BAS/BMS, AV-systems interfacing; astronomical timeclock, electronic security, and lockout; full 8-year warranty on all Unison dimmer racks, dimming modules and fans; and, as important as those technical benefits—ETC's acclaimed 24/7 customer service. Visit the ETC Architectural Web site for dealer and representative information.

www.etcarchitectural.com 🔄 153

Lumux Lighting Inc.

Efficient Architectural Lighting 877-895-5552

16 Electrical

Lumux Lighting Inc., an architectural lighting company, distinguishes itself by manufacturing innovative, energy efficient, aesthetically and cost effective lighting fixtures serving the residential, commercial, and industrial markets. Lumux's creativity, quality, and unwavering commitment to service are the characteristics that make it a reliable architectural lighting source for architects, lighting designers, and specifiers. Lumux has the largest selection of stainless steel and LED driven fixtures in stock for any design and build type of applications. Full catalog online.

www.lumux.net 🔄 154

Luraline Products Company

Lighting Fixtures 800-940-6588

16 Electrical

The Helos family of lighting fixtures from Luraline Products Company features a classic industrial design in a coordinated collection of pendant, ceiling, wall, and post mount configurations. Helos is offered with choice of incandescent or energy-efficient compact fluorescent or HID lamping. A full palette of painted and metallic finishes is available, as well as custom colors on request. All fixtures in the series are suitable for interior or exterior applications. For more information, please call or visit the Web site.

www.luraline.com 🔄 155

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Prima Lighting Corp.

Light Fixtures 866-885-4915

16 Electrical

The Multi light fixture series gives you complete freedom and control over your light source with high-end, elegant, and intriguing style. Easily direct the light exactly where you want and tailor the power to your needs. Choose a nine, six, four, three, or two light configuration available as a wall (shown), pendant, floor, or table light. Chrome and matte silver finishes. Clean, architectural multipoint canopies are available for the pendants. Please visit Prima Lighting's Web site or call to find out more about its breakthrough OPUS line of contemporary architectural lighting.

www.primalighting.com 156

Nalsa

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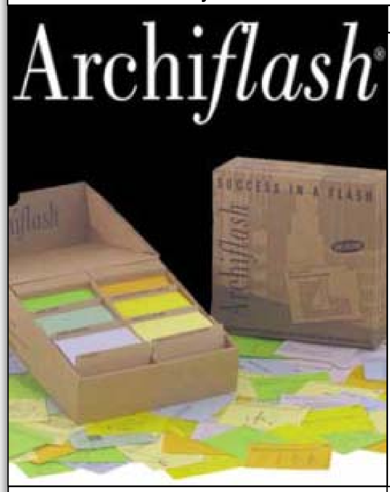

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www.archiflash.com 159

Primelite Manufacturing Corp.

Hanging Light Fixtures

16 Electrical

Globes available in glass, polyethylene, acrylic, and polycarbonate. Diameters from 6-in. to 36-in. Chain, cord, and stem suspensions are available in custom stem lengths to meet your specifications. Primelite also carries decorative outdoor fixtures. Sign and task lighting. Custom types of heads and arm bends are available in all aluminum parts. Indoor wall sconces and a wide selection of children's fixtures. Hanging prismatic fixtures available in 12-in., 19-in., 22-in., 26-in. diameters with or without cages. All fixtures can be made for incandescent, metal halide, high-pressure sodium, and PL bulbs. Metal parts are powdercoated; wide selection of colors to chose from. Fixtures can designed to meet your specifications. Fax number 516-868-4609.

www.Primelite-MFG.com 157

FAAC International, Inc.

Invisible Swing Gate Operators

UL 325
Model 760

2 Site construction

FAAC is the world's largest specialized manufacturer of hydraulic operators for swing, slide, and barrier gate systems. The Model 760 hydraulic swing gate operator is designed specifically for in-ground installation for residential applications. Its power, reliability, and invisibility make the 760 ideal for large ornate gates. For more information on the 760 and other FAAC products, visit the Web site.

www.faacusa.com 160

SELUX Corporation

Indirect Lighting

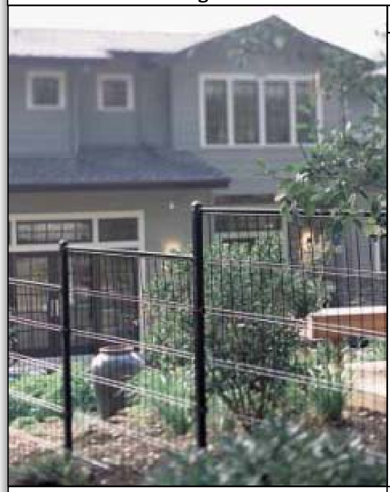
16 Electrical

RITORNO luminaires from SELUX Corporation combine design elegance with high performance engineering to deliver virtually shadow-free illumination with extremely low brightness. All housings are constructed of high quality die cast aluminum. High purity aluminum reflector shades are supplied with drip groove around perimeter to prevent rain marks on underside. Fixture heads are formed to match supplied aluminum reverse tapered poles. Stylish wall mounted units are also available. Designed to complement and enhance contemporary architecture and urban settings both at night and during the day.

158

Master Halco, Inc.

Decorative Wire Fencing



2 Site construction

New EuroScape™ 300 Decorative Wire fencing incorporates some of the best design elements of industry-leading ornamental iron and color chain-link. Its steel and wire mesh construction in a special twin wire design creates unique joint strength and durability. EuroScape 300 is available in four colors: tan, bronze, white, and black. Decorative wire fencing complements a variety of architectural styles and is backed by a 12-year limited warranty. With more than 60 locations across North America, Master Halco has the products and services to satisfy your project requirements. Visit the Web site to view extensive product offering and download specifications and drawings. (Black decorative wire fencing as seen in the 2003 Sunset Idea House.)

www.FenceOnline.com 161

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Modern Outdoor

Commercial Grade Outdoor Furniture 818-838-7060

2 Site construction

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www.modernoutdoor.com 162

Boston Valley Terra Cotta Inc.

Architectural Terra Cotta Rainscreen 888-214-3655

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75

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www.bostonvalley.com 165

DEX Studios

Terrazzo & Concrete 404-753-0600

DEX STUDIOS
CONCRETE & TERRAZZO

3 Concrete

DEX manufacturers precast architectural concrete and terrazzo products for commercial, multi-unit, and residential applications. Superior finishes and colors in both cast concrete and terrazzo are available in sinks, bathtubs, shower pans, tile, bar and countertops, tabletops, fireplaces, and tilt-up wall panels. All DEX products are pre-cast in a controlled environment, polished to a hard dense finish, and sealed to enhance depth and protect the finished product. Sample boards of 25 spectacular concrete colors and 10 standard terrazzo finishes available. DEX has a combined total of 50 designs and sizes of sinks, all standardized with several ADA compliant designs to make specifying them easy.

www.dexstudios.com 163

Vetroarredo North America

Glass Block 724-242-2121

4 Masonry

VETROARREDO® is moving the glass block world to a colorful new future with a collection of exciting, quality products second to none. It crafts beautiful color and crystal clear glass block; VETROSHAPE℠ Finishing Pieces; smooth satin finishes, and unique products like VETROMARMO™ Marble Faced glass block. If you desire an easily installed mortar and silicone free interior partition, VETROARREDO's modular system—the wooden grid that snaps together in a snap℠—is available in a variety of sizes and colors. Design your future with the world leader in glass block. Add Some Color to Your Life!℠ with VETROARREDO. Fax number 724-242-2323. Email info@vanagb.com.

www.vanagb.com 166

L. M. Scofield Company

Concrete Coloring Admixture 800-800-9900

3 Concrete

CHROMIX® Admixtures for Color-Conditioned™ Concrete: Award-winning projects begin with award-winning materials. CHROMIX Admixtures for Color-Conditioned Concrete are colored, water-reducing, set-controlling admixtures for ready mixed architectural concrete. Coloring concrete integrally, they produce rich hardscapes and precast, tilt-up, or cast-in-place buildings of enduring beauty. CHROMIX Admixtures provide permanent, streak-free color conditioning and increased concrete strength at all ages. Call or email to request color cards and specifications. Email info@scofield.com.

www.scofield.com 164

Gage Corporation, Intl.

Metal Surfacing 800-786-4243

5 Metals

GageMetal. An innovative collection of 18 new designs suitable for walls, elevators, and column covers. Standard sizes 48-in. by 96/120-in. with available thicknesses from .025-in. aluminum to 16-ga. stainless steel. Custom design and collaboration is available. All GageMetal designs are available in sheet form for direct application to the job site substrate. They can also be panelized for demountable use with Z-bar clips or the Gage extrusion system. Fax number 608-269-7622. Email gage@centurytel.net.

www.gageverticalsurfacing.com 167

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Gooding Aluminum

Aluminum for Architecture

5 Metals

Have you seen the new GA interactive Web site? With over 400 project shots, like this one here, and hundreds of items in the detailed product/info finder, you can discover something you haven't seen before. GA provides an outstanding selection of aluminum patterns, trims, and elements. Helping you to access and utilize the creative process and how far that can take you. You can order samples on-line and there's also a "What's New" section detailing the latest product and project news.

www.goodingalum.com

Melton Classics, Inc.

Architectural Products

6 Wood & plastics

Melton Classics provides the design professional with the most comprehensive selection of quality architectural products in the industry, including architectural columns, balustrades, moldings, cornices, and a wide array of architectural elements. Architectural columns are available plain or fluted, load-bearing or column covers, round or square in fiberglass, fiberglass/marble composite, synthetic stone, cast stone, GFRC, and wood for paint or stain. Melton Classics offers a maintenance free balustrade product ideal for any application. Balustrades are available in four durable materials: MarbleTex™ synthetic stone, poly/marble composite, cast stone, and polyurethane, and can meet any code or radius application.

www.meltonclassics.com

171

HDI Railings, Inc.

Pre-Engineered Railings 717-285-4088

5 Metals

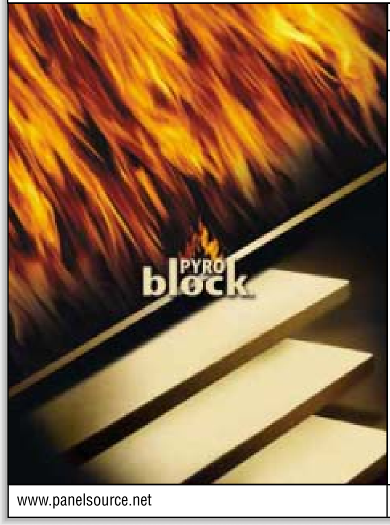
HEWI® Nylon Pre-engineered Railing System: Add color and strength to your project with a nylon guardrail system. Nylon-coated railings come in a range of attractive colors and wood finishes. They provide exceptional structural strength, chemical resistance, hygienic qualities, and are virtually maintenance free. Infill materials are available in tempered glass and perforated metal. Handrails in colored nylon and solid wood. Standard and custom designs are available. Complete supply and installation service is available throughout North America, which includes *inox*™, CIRCUM™, HEWI Nylon, and d line™ railing systems. Email info@hdirailings.com.

www.hdirailings.com

169

Panel Source International Inc.

Fire-Retardant Particleboard, MDF & Plywood Panels 877-464-7267



6 Wood & plastics

Pyroblock® Class A fire-retardant particleboard, MDF, and Plywood. Formaldehyde-free, FSC certified, recycled or rapidly renewable fibers. Pyroblock is ideally suited for the AEC community working on LEED™ registered projects. Pyroblock is available in numerous thicknesses and sizes; availability is not a problem when you specify Pyroblock.

www.panelsource.net

172

Lapeyre Stair Inc.

Convenient Conventional Stairs

5 Metals

In addition to its unique alternating tread safety-stair products, Lapeyre Stair now provides in-house design and fabrication of conventional industrial stairs that are designed and built to order. With proprietary computerized design capabilities and a facility dedicated to stair fabrication, Lapeyre Stair can offer unprecedented one-stop-shopping convenience, low prices, and lead times of three weeks or less. Check the Web site for conventional stair product updates and technical information, plus interactive features related to Lapeyre's Alternating Tread Stair: downloadable CAD files, online pricing, and more. In space-squeezed applications, the Lapeyre Alternating Tread Stair provides safer, easier access than vertical or ship's ladders.

www.lapeyrestair.com

170

Cedar Shake & Shingle Bureau

Cedar Roofing & Sidewall 604-820-7700

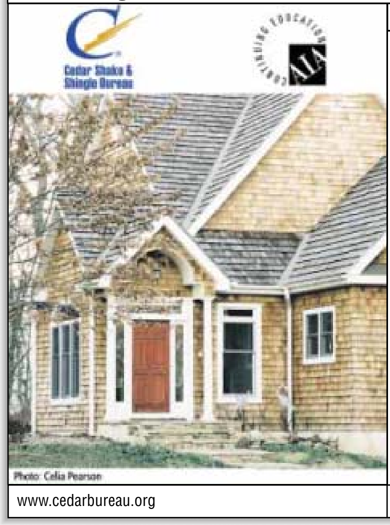


Photo: Celia Pearson

7 Thermal & moisture protection

The Cedar Shake & Shingle Bureau is a non-profit trade association founded in 1915. The organization provides installation instructions, AIA CEU educational seminars and technical advice. Member manufacturers produce Certi-label brand cedar shakes and shingles for both roofing and sidewall use as well as undergo random, unannounced third party inspections to ensure product quality. Certi-label brand cedar shakes and shingles are a renewable resource, durable, impact and wind resistant, and available with either pressure impregnated preservative or fire-retardant treatment. Some Certi-label products are available in pre-stained or pre-primed finish.

www.cedarbureau.org

173

CertainTeed Fiber Glass Insulation

Vapor Retarder Spec Sheet 800-233-8990

CertainTeed
MEMBRAIN
The SMART Vapor Retarder

7 Thermal & moisture protection

A two-page brochure describes the benefits and features of MemBrain™, CertainTeed's Smart Vapor Retarder. This unique product breathes to allow excess moisture to escape, reducing risk and liability of moisture-related problems in walls. The spec sheet also details the product performance and permeability.

www.certainteed.com

174

Circle Redmont, Inc.

Glass Systems 800-358-3888

8 Doors & windows

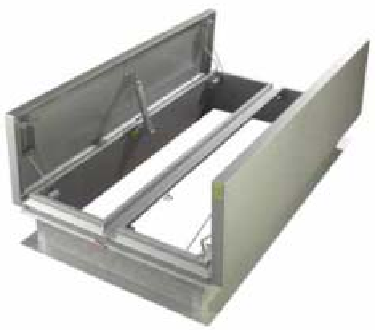
Circle Redmont's cutting edge technologies and passion for dramatic elegance shine through every glass system it manufactures. At the heart of the Circle Redmont philosophy is a firm commitment to the production of the highest quality glass products that combine intelligence with sophisticated precision; the result—simply beautiful. Email sales@CircleRedmont.com.

www.CircleRedmont.com

177

J.L. Industries, Inc.

Smoke Vents



7 Thermal & moisture protection

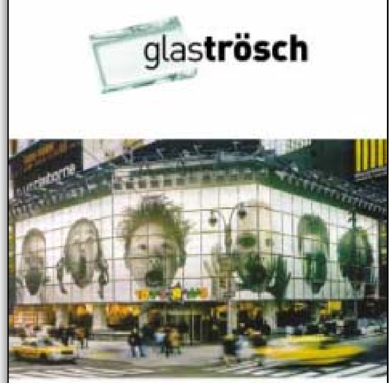
J.L. Industries introduces a new line of UL-listed, FM-approved fire vents. These fire vents are equipped with UL-listed 165° fusible link for automatic operation. J.L. Industries fire vents are manufactured with 14-ga. galvanized steel curb and frame and 11-ga. aluminum covers. J.L. Industries now offers a full line of domed fire vents, equipment hatches, and skylights in addition to galvanized steel and aluminum roof hatches and aluminum floor doors.

www.jlindustries.com

175

IGT Glass

Anti-Reflective Glass 480-767-8220



8 Doors & windows

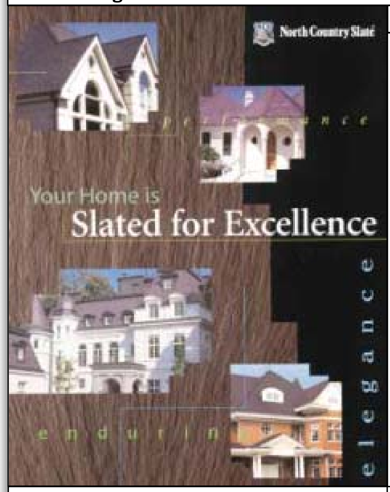
LUXAR reduces glare and reflection by 99.5%, making every application where it is used so clear that the glass is almost invisible. When high visibility is desired Luxar is the product of choice. It is an ideal product for storefronts, such as Toys R US, pictured, museums, stadiums, view homes and restaurants, display cases, and projection rooms. Contact IGT Glass for more information.

www.luxar.ch

178

North Country Slate

Slate Roofing Brochure 800-975-2835



7 Thermal & moisture protection

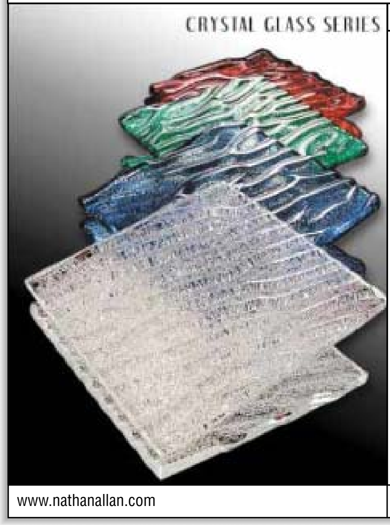
North Country Slate offers a new brochure explaining the design and performance advantages of their remarkable roofing material to your residential customers. In six glossy pages, "Slated for Excellence" presents all the features and benefits to your client, the homeowner. Make sure you have this brochure on hand for your next discussion on slate roofing. Email info@ncslate.com.

www.northcountryslate.com

176

Nathan Allan Glass Studios, Inc.

Decorative Glass Panels 604-277-8533



8 Doors & windows

Crystal Glass Series is a new addition to Nathan Allan's exclusive Josiah J Collection. Crystal Glass Series incorporates a special glass frit that is fused to the back of the glass to add a stunning and unique textured feel to the glass. Originally developed for Four Seasons Hotel in Whistler, BC, to provide unique glass light covers, with the ability to hide the hot spots of the lighting sources, Crystal Panels are now being used in illuminated feature walls, with added colors such as Cognac or Cobalt Blue. Available in clear or colored glass. Catalog available.

www.nathanallan.com

179

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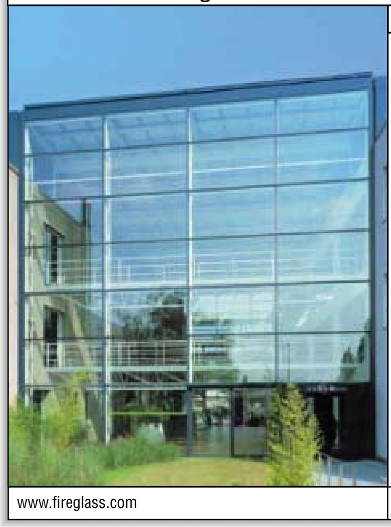
Technical Glass Products

Fire-Rated Steel Framing



8 Doors & windows

Technical Glass Products offers the Fireframes™ Curtainwall Series—fire-rated steel framing for large expanses of glass spanning multiple stories. Available for interior or exterior use, the Curtainwall Series carries fire ratings up to two hours. Custom exterior face caps allow a wide variety of appearances, including stainless steel. For more information visit the company's Web site.

www.fireglass.com

⇄ 180

Unicel Architectural Inc.

Pivoting Blinds

Now you see it, Now you don't!

8 Doors & windows

No string attached. Unicel Architectural Inc. has developed a unique patented glazing product: Vision Control®. With this custom-designed unit, you can finally enjoy total control of light, privacy, and sound without having to worry about the cleaning. Unlike ordinary Venetian blinds installed separately from the glass, Unicel's pivoting blinds made of extruded aluminum are mounted inside a hermetically sealed glass unit offering you 100% dust-free and germ-free louvered glazing. Vision Control blinds are operated using a small hand crank, thumbwheel, motorized switch, or even computer: control at your fingertips, cord-free and string free. Ideal in partitions, doors, sidelights, windows, skylights, and more.

www.visioncontrol.qc.ca

⇄ 181

Zero International, Inc.

Automatic Door Bottoms 800-635-5335

8 Doors & windows

Automatic door bottoms, designed & built to last. Tested through 5 million cycles, they are engineered for easy, precise installation, with a minimum of parts subject to wear. Quality construction to renowned ZERO standard makes these gaskets the choice for superior performance and unequaled service life. Double neoprene seals and a patented spring action, automatically drop and retract in a scissors-like motion as door is operated. Fax number 800-851-0000.

www.zerointernational.com

⇄ 182

Crossfield Products Corp.

Architectural Floor Surfacing

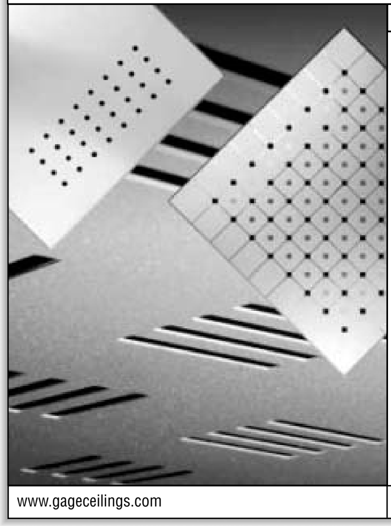
9 Finishes

Dex-O-Tex Micro-Topping is a thin-section, seamless polymeric floor surfacing that offers years of durability and low maintenance costs. The protective surfacing is less moisture sensitive than conventional sheet and tile flooring, and provides an attractive, wear-resistant finish. Micro-Topping can be applied over a wide range of surfaces, eliminating the cost of expensive removal. It can be antiqued or chemically stained with many beautiful colors to create a variegated shading of hues and allows the application of stencils and saw-cuts for limitless design options. A wide range of polyurethane sealers with varying degrees of gloss or slip-resistance will stand up to repeated floor cleanings.

⇄ 183

Gage Corporation, Intl.

700 Series 800-786-4243



9 Finishes

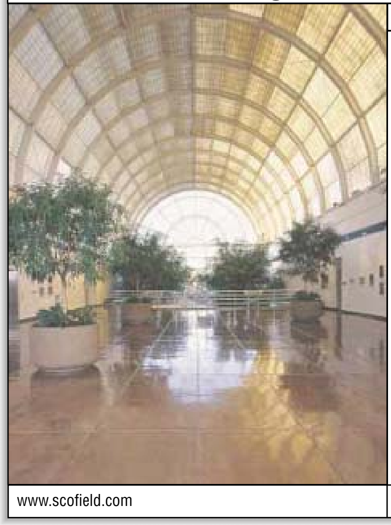
The new standard for perforated metal ceilings. Gage introduces its new 700 series of perforated metal ceilings manufactured from 50% recycled aluminum. Standard designs include five distinctive finishes and 14 different perforation patterns. Selective and custom designs are also available. Contact the Gage factory for literature and samples.

www.gageceilings.com

⇄ 184

L. M. Scofield Company

Concrete & Cementitious Flooring 800-800-9900



9 Finishes

Stylish Scofield flooring systems: For beauty and durability, concrete and cementitious toppings provide stylish flooring for high traffic areas in offices, lobbies, public spaces, food service, and retail areas. Scofield Systems offer diverse choices—ranging from monochromatic toppings to translucent, antique stains for faux finishes and dramatic graphics. Email info@scofield.com.

www.scofield.com

⇄ 185

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Teragren LLC

Bamboo Flooring, Panels & Veneer 800-929-6333

9 Finishes

Teragren manufactures beautiful, durable, renewable interior bamboo solid strip and wide plank flooring, stair components, panels and veneer. Featured in the Hyatt Maui, Timberland stores, Seattle Central Public Library, and other commercial and residential installations nationwide. 25% harder than oak and 2-1/2 times more stable than maple. Available in two grains and colors. Contributes to LEED™ as a rapidly renewable resource and low-emitting material. Coating materials water-based, solvent-free. 25-year residential and 5-year commercial finish warranties. Visit the company's Web site for more information. Contact Teragren for samples and/or brochure.

www.teragren.com 186

Rangine Corporation / Rakks

Compression Support Pole

10 Specialties

The latest addition to the Rakks family of shelving hardware is the PC4 floor-to-ceiling compression support pole. Shown here with Rakks shelf support brackets and extruded aluminum shelf, this pole features threaded compression mounts and can accommodate floor to ceiling heights of up to 12-ft. When properly anchored to the ceiling, this pole can function as both a room divider and shelving system—perfect for lofts and apartments.

www.rakks.com 189

Trespa North America, Ltd.

Interior Wall Panels

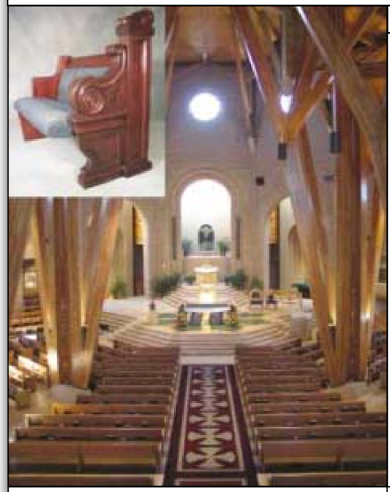
9 Finishes

Trespa Virtuon®: destination style and function. Aesthetics, durability, easy cleaning, and maintenance are key factors when designing a high traffic interior such as an international airport terminal, subway or train station. Virtuon has been specifically developed for high impact, high traffic interiors. Designed for busy locations. Hygienic: top layer is impermeable. Withstands heavy and repeated cleaning; easy graffiti removal. Stylish and comfortable appearance. Trespa Virtuon is available in over 50 colors including 15 metallics. It also adds depth and dimension to any interior with six available textures: silk, satin, rhino, ribbon, rock, and bark.

187

The Marshall Company

Hardwood Pews 208-642-3344



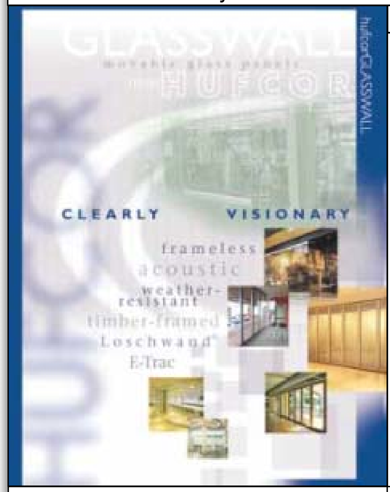
12 Furnishings

For over 75 years, The Marshall Company has offered distinctive church furnishings throughout the U.S. and Canada. A longtime leader in the church furniture business, Marshall prides itself on being one of the few companies in the U.S. to still manufacture only quality solid hardwood pews. That means no veneers, no chipboard cores, no plastic laminates, just the classic beauty and durability of solid Northern red oak. But materials aren't everything; Marshall's highly skilled craftsmen are dedicated to designing furniture that is beautiful and functional, as well as being affordable. Fax number 208-642-9537. Email pews@marshallpews.com.

www.marshallpews.com 190

Hufcor, Inc.

Movable Glass Partition Systems 800-542-2371



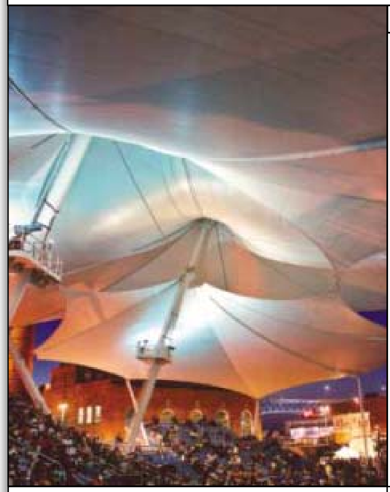
10 Specialties

Hufcor introduces a complete new line of movable glass partition systems featured in a new brochure. The line features frameless storefront style panels with patent-pending batwing pass-doors, acoustic and weather resistant glasswalls without floor tracks, wood-clad products, and electrically controlled E-Trac tracking system and Loschwand overhead systems. Call or visit the Web site.

www.hufcor.com 188

FabriTec Structures

Tensile Fabric Structures



13 Special construction

FabriTec Structures introduces a new generation of tensile fabric technology. Its highly specialized fabric structures utilize the most advanced architectural materials available and are non-combustible, both thermal- and UV-resistant, and can offer full weather protection. With virtually unlimited design options and applications, FabriTec's products are both practical and often visually spectacular. Designers can choose fabrics from a wide range of color and translucency and enjoy a cost effective and "fast-track" alternative to conventional building systems. FabriTec Structures provides clients with complete design/build services, including concept development, engineering, fabrication, project management, and installation.

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glas**trösch**

Toys'R'Us Flagship Store at Times Square, New York City, uses **LUXAR® Anti-Reflective Glass** for the facade.

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The Commission of Fine Arts, an independent Federal agency advising the Federal and District of Columbia government on matters of architecture and art, is seeking a senior administrative director and chief technical advisor to serve as Secretary of the Commission. In addition to knowledge and experience in senior management, the position requires knowledge of the technical and aesthetic aspects of architecture including contemporary design, historic preservation, landscape design or urban planning, as well as knowledge of fine art and graphic design.

For specific questions about the Commission or this position, interested candidates may contact Kristina Alg at (202)504-2200.

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http://jobsearch.usajobs.opm.gov/ses.asp

INTERN ARCHITECT

Moule and Polyzoides Architects and Urbanists, Pasadena, CA. Send resumes to: Rex Uber, 180 East California Blvd., Pasadena, CA 91105

ARCHITECTURAL DRAFTSPERSON AND JOB CAPTAIN

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Arthur Tam & Associates, Oakland C.A. B.S. + 5 years experience. Fax: HR (510) 446-2211 or email: HR@tamassociates.com

ARCHITECTURAL DESIGNER

To perform preliminary architectural design, site planning, computer-aided drafting using AutoCAD, Excel, Photoshop, Microstation, architectural detailing, color rendering and computer generated 3-dimensional conceptual models and animation; prepare schematics and draw plans to scale, coordinate with mechanical, structural, electrical engineers and landscaping architects; prepare construction documents. Require: B. Arch. in Architecture and six months experience in the job offered or as Intern Architect. Must demonstrate ability to perform stated duties by portfolio. Competitive salary and benefits, 40-hour week, M-F. Apply with resume to: John A. Matthews, Principal AIA, John A. Matthews Architects, 335-A East Fourth Avenue, San Mateo, CA 94401.

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ARCHITECTURAL DESIGNER (PROJECT DESIGNER)

Assist lic. architect w/ detailed drawings of architectual designs using Archicad 8.1 and Freehand. Use FileMaker 6.0/Architectronica to manage design/construction data. BA in Architecture + 2 yrs. exp. in job or in field req. Send resume to Aleks Istanbullu Architects, 1659 11th St. Santa Monica, CA 90404.

ARCHITECTURAL DESIGNER

Provide drawings of basic design concepts for interiors of commercial buildings/residences. Prep design specs and materials/cost estimates for projects integrating lighting systems w/architectural elements into unified design scheme under supervision of licensed architect. 35 hrs/wk. Req: Bach in Architecture or equiv & 4 yrs exp or as Project Coordinator, Building Group. Resume: M DeVane, Super Vision International, 8210 Presidents Drive, Orlando, FL 32809

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ARCHITECTURAL DESIGNER

Responsible for project design, planning, construction and documentation under supervision of Director. Req. Bachelor's degree or foreign degree equivalent in Architecture and 2 yrs experience. send resume to Clerkley Watkins Group, 5599 San Felipe Suite 910, Houston, TX 77056.

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Bachelor of Architecture degree req., 2 yr exp req. Resume to: The Acres Group, 55 E. Huntington Dr., Suite 330, Arcadia, CA 91006.

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MURALIST

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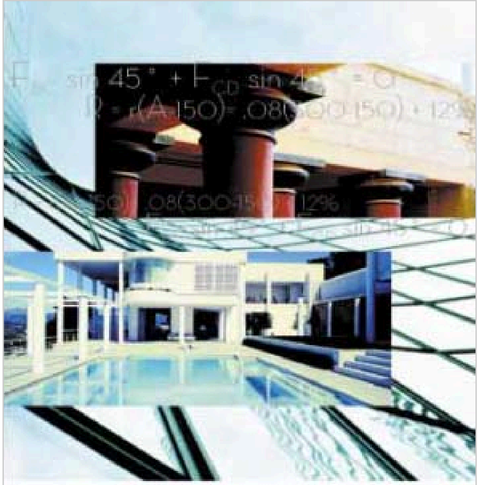

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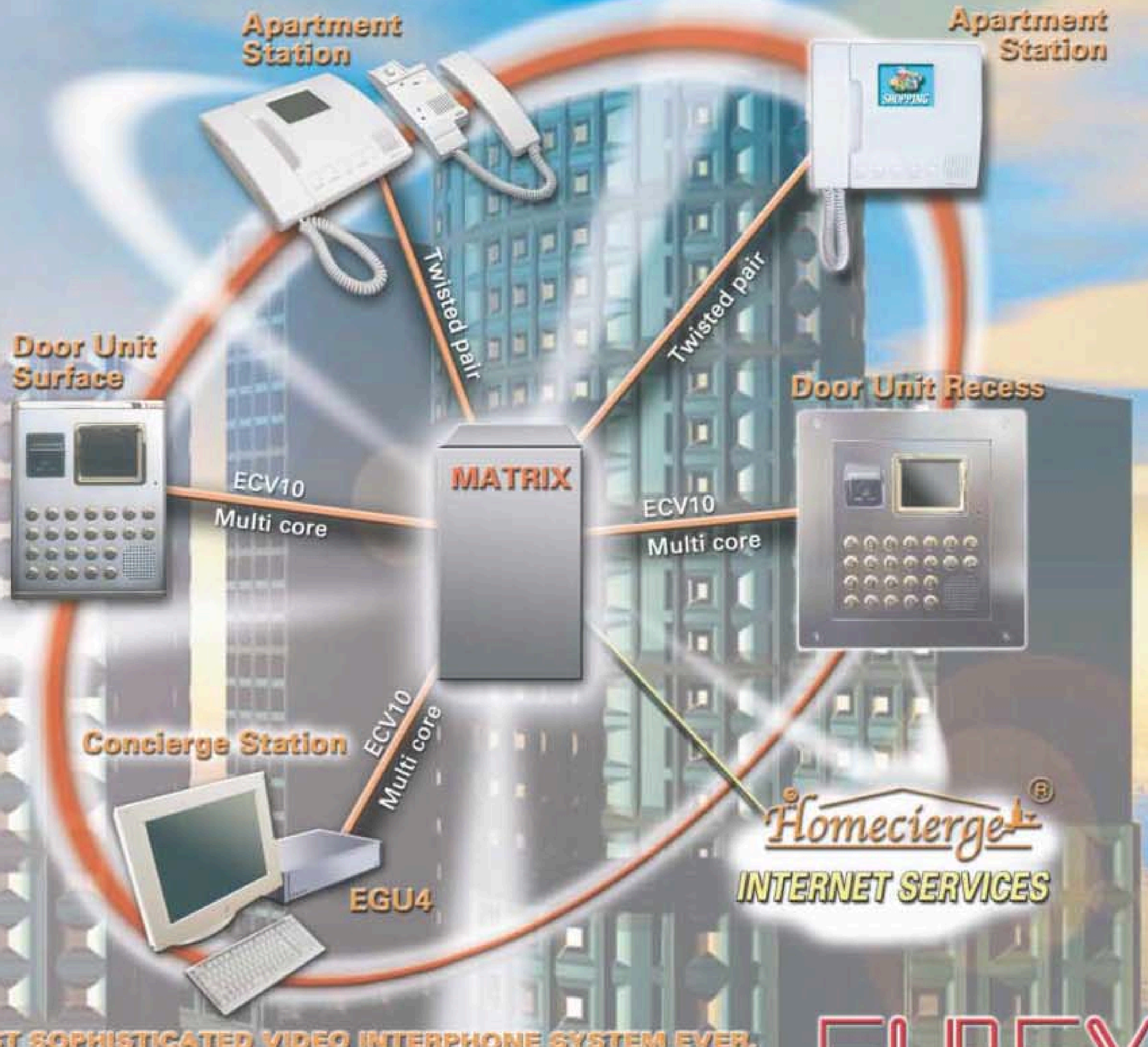
Apartment Station
Apartment Station
Twisted pair
Twisted pair
Door Unit Surface
Door Unit Recess
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Multi core
ECV10
Multi core
Concierge Station
ECV10
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Frances Daley Fergusson: Creating a campus that inspires

Interviewed by John Peter Radulski

Since becoming president of Vassar College in 1986, architectural historian Frances Daley Fergusson has spearheaded a campaign to enhance the school's 1,000-acre campus in Poughkeepsie, New York, which boasts buildings by Eero Saarinen, Marcel Breuer, and Cesar Pelli, among others. Fergusson graduated from Wellesley College and earned master's and doctoral degrees in art history from Harvard. She has taught at the University of Massachusetts Boston, where she chaired both the urban studies and American civilization programs, and was a provost and vice president at Bucknell University.

Q: *How do the new projects and campus improvements you've overseen contribute to the learning experience of Vassar students?* When I arrived, the campus grounds were rather shabby. Students seemed to go from their dormitories directly to the library, or classrooms, or the dining hall. There weren't a lot of outdoor spaces where students would congregate. We've upgraded many areas on campus to suit this purpose, while also renovating these destination buildings and constructing new ones. All these efforts contribute to the social and intellectual life of everyone in the campus community.

Cesar Pelli completed the Frances Lehman Loeb Art Center at Vassar in 1993. What prompted you to hire him for the Center for Drama and Film, completed last year? He was a dream to work with on the art center—he saw the design process as a collaborative effort between himself, the client, and the art faculty. And that building has functioned nearly perfectly, and has actually exceeded our expectations. The center is beautiful and very contextual with the adjacent Romanesque- and Gothic-style buildings. The Center for Drama and Film was to be built in an area of the campus that had no real architectural identity. He made very clear references to Breuer's Ferry House, a 1908 Arts and Crafts–style house by Lewis Pilcher, and other buildings nearby. The project speaks strongly to Modernism at the turn of the previous century [Pilcher], midcentury [Breuer], and the present [Pelli]. Now this part of the campus makes visual and architectural sense as it never did before.

What facilities are next in line for improvement? Kenyon Hall [a gymnasium built in 1933 by Allen & Collens] is undergoing a massive renovation by Gluckman Mayner Architects. New classrooms will be created, as well as a space for the Vassar Repertory Dance Theatre. This project will be the culmination of a campus program to create new and renovated purpose-specific art and performance facilities.

Is there one particular detail about Vassar's campus that excites you the most? I love the diversity of architecture here. There are many large buildings done in different styles, all mediated by the grandeur of the landscape. Vassar is a registered arboretum with more than 200 species of trees. In many ways, the campus reflects the students that Vassar attracts—interesting and diverse.

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